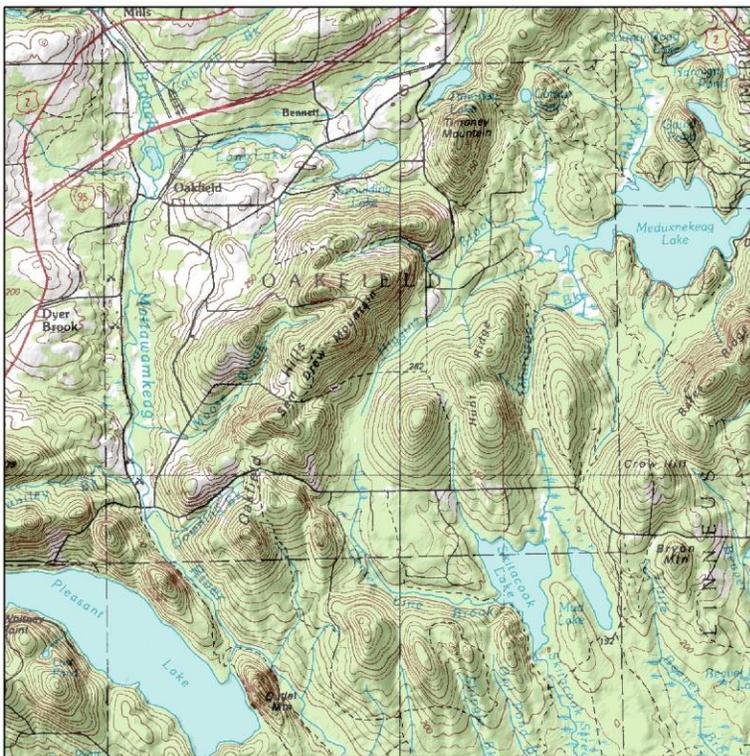


# Maine GenLead 115-Kilovolt Transmission Line

## Wetland and Waterbody Delineation, Vernal Pool Survey, and Rare, Threatened, & Endangered Species Survey Report

Aroostook and Penobscot Counties, Maine

May 2011



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## 1.0 INTRODUCTION

Stantec Consulting (Stantec) performed wetland and waterbody delineations, vernal pool surveys, and rare, threatened, and endangered (RTE) species surveys in association with a proposed transmission line project located in Penobscot and Aroostook Counties, Maine (Figure 1). The proposed project will involve the construction of approximately 58.5 miles of new transmission line running from Oakfield to Chester and is part of the Maine GenLead 115-Kilovolt Transmission Line Project (project).

This report includes wetland, waterbody, and vernal pool descriptions and RTE species information for the proposed project corridor. The report is intended to provide information required for U.S. Army Corps of Engineers (Corps) and Maine Department of Environmental Protection (MDEP) permitting and contains:

- A Site Location Map (Figure 1);
- General information regarding the survey methods and results for the wetland and waterbody delineation, vernal pool survey, and RTE survey.
- Specific information for each wetland identified within the project area (Appendix A Table A-1);
- Specific information for each waterbody associated with the project area (Appendix A Table A-2);
- Maps presenting the location of wetland resources and vernal pools within the project area (Figure 2);
- Information regarding applicable state and federal wetland regulations and permitting requirements;
- Corps wetland delineation data forms (Appendix B);
- Specific vernal pool information for each vernal pool surveyed (Appendix C);
- Significant Vernal Pool (SVP) data sheets (Appendix D); and
- Representative site photographs (Appendix E).

## 2.0 SURVEY METHODS

Stantec performed natural resource surveys along a 58.5-mile proposed transmission line corridor running from Chester to Oakfield, Maine. The proposed line parallels a segment of the Line 56 transmission line corridor from a substation in Chester for approximately 7.5 miles where it then parallels the existing Maine Electric Power Company (MEPCO) transmission line corridor northeast to Glenwood Plantation where it turns nearly due north through T3R3 and T4R3 to Oakfield just north of South Oakfield Road where it turns northwest to meet the Oakfield sub-station. The total width of the project area is 200 feet. The specific methods for each type of survey (i.e., delineation, vernal pool, and RTE survey) are described in the following pages.

### 2.1 PRELIMINARY LANDSCAPE ANALYSIS

Prior to conducting field surveys, Stantec reviewed U.S. Geological Survey topographical maps, National Wetlands Inventory maps, and State of Maine Office of GIS digital data layers for this area of Maine, as well as the U.S. Department of Agriculture Soil Survey map for Aroostook and Penobscot Counties, Maine. The information gathered from these sources was used to identify the approximate location of known wetland and waterbody resources within the project area to support field efforts.

### 2.2 WETLAND AND WATERBODY RESOURCE DELINEATION

Wetland boundaries under local, state, and federal jurisdiction were determined using the technical criteria described in the *Corps of Engineers Wetlands Delineation Manual*.<sup>1</sup> Wetland delineations were conducted between August 2009 and May 2010, under seasonally-appropriate field conditions. Wetland boundaries delineated during winter conditions were checked in spring 2010. Wetland boundaries were marked with pink, numbered flagging and surveyed using Trimble® Pro-XR Global Positioning System

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<sup>1</sup> Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station. Vicksburg, MS.

(GPS) receivers. GPS data were then used to produce the attached resource maps (Figure 2). Streams and *Wetlands of Special Significance* were identified based on criteria in the Natural Resources Protection Act (NRPA). Identification of *Wetlands of Special Significance* was limited to observable conditions within the project area and information provided by natural resource agencies.

### 2.3 VERNAL POOL SURVEY

Stantec completed vernal pool surveys in May 2010 along the length of the proposed transmission line corridor and across the entire 200-foot width of the corridor within all previously-delineated wetlands. A second site visit was performed in late May to those pools with potential to meet the MDEP classification of an SVP (i.e., those pools that were determined to be natural) and to those man-made potential vernal pools with no activity at the first visit. The purpose of the vernal pool survey was to identify and evaluate vernal pool habitat. The results of this vernal pool survey were derived using standard field techniques and represent observations made during the amphibian breeding season. Vernal pools are dynamic habitats that vary in water level, vegetative cover, and other physical characteristics during the course of a year, as well as from year to year. In addition, the breeding activity of amphibians, particularly the initiation of breeding, is dependent upon seasonal environmental parameters such as temperature and precipitation. Due to this variability, the presence and number of egg masses may differ between breeding seasons and during the course of a given breeding season. The presence, absence, and number of egg masses presented in this report reflect the results of the 2010 survey event. Based on observations of the on-site vernal pools, the survey event conducted by Stantec was at the appropriate seasonal period for characterizing vernal pools.

Vernal pool survey methodology followed the 2010 criteria established by the Maine Association of Wetland Scientists. Each vernal pool area was thoroughly surveyed by slowly wading through the pool basin, counting amphibian egg masses, and noting other vernal pool-dependent species use. Data were collected on the physical and biological characteristics of the pool such as the presence/absence of a permanently flowing inlet or outlet and the presence/absence of fish. The data were used to determine if the pools met the criteria of an SVP as defined in Chapter 335 Section 9 of the NRPA. As defined by this section, a vernal pool is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet or outlet and no viable populations of predatory fish. In addition, an SVP contains one of the following:

- 40 or more wood frog (*Lithobates sylvatica*) egg masses;
- 20 or more spotted salamander (*Ambystoma maculatum*) egg masses;
- 10 or more blue spotted salamander (*Ambystoma laterale*) egg masses;
- Presence of fairy shrimp (*Eubrachyptus* spp.); or
- Documented use by a state-listed rare, threatened or endangered species that commonly require a vernal pool to complete a critical portion of their life-history such as Blanding's turtle (*Emydoidea blandingii*), spotted turtle (*Clemmys guttata*), or ringed bog haunter dragonfly (*Williamsonia lintneri*).

Vernal pools that occur within a wetland but are man-made are not regulated under NRPA Chapter 335. However, regardless of whether or not the pool is natural, the Corps, the U.S. Environmental Protection Agency (USEPA), and the U.S. Fish and Wildlife Service (USFWS) may regulate each vernal pool under the Clean Water Act if the project involves impacts to Corps-jurisdictional wetlands. The Corps does not have jurisdiction over vernal pools if they do not exist within a jurisdictional wetland.

The boundary of each vernal pool depression was located using GPS Trimble ® Pro-Series receivers. GPS data were then used to produce the attached resource maps (Figure 2). Each vernal pool was assigned a unique alpha-numeric code (e.g., VP01DD\_M, SVP10MA\_N) that appears on the map and within this report.

## 2.4 RARE, THREATENED, & ENDANGERED SPECIES SURVEY

Prior to conducting field surveys, Stantec ecologists performed a landscape analysis reviewing existing relevant natural resource data to target field surveys within those habitats in the project area with a moderate to high likelihood of supporting RTE plant species. The existing natural resource data that were reviewed prior to conducting field surveys included high-resolution digital color aerial photos, National Wetlands Inventory program data, known locations of RTE species in the vicinity of the project area, and topographic maps. Furthermore, during Stantec's wetland delineations in 2009, field ecologists provided an initial assessment of existing on-site habitat conditions that could potentially support RTE species and determined if follow-up surveys during appropriate growing season conditions (i.e., summer 2010) would be warranted in certain habitat areas.

Based on this information review and initial field assessments, areas targeted for RTE surveys under appropriate growing season conditions primarily included large wetland complexes such as open and forested peatlands, forested and partially forested wetlands dominated by northern white cedar (*Thuja occidentalis*), stream-associated wetlands and floodplains, and open grass-dominated upland areas. In addition to Stantec's landscape analysis, the Maine Natural Areas Program (MNAP) completed an independent landscape analysis of the project area and provided Stantec the locations of additional potential survey areas within the project area.

Meander surveys were conducted through each habitat area identified during the landscape analysis and initial field assessments. Additional field surveys were conducted throughout the entire project area during the course of the wetland delineations. Meander surveys involved the field ecologist walking a zigzag pattern through the habitat area to provide adequate coverage within the habitat area. Any rare plant population identified within the project area was located using a Trimble® Pro-Series GPS receiver. Rare plant survey forms provided by MNAP were completed for each RTE plant population observed within the project area and include representative photographs. These forms can be found in Section 9 of this application.

## 3.0 SURVEY RESULTS

### 3.1 GENERAL SITE DESCRIPTION

The proposed transmission line is approximately 58.5 miles long and runs from Oakfield, Maine, in Aroostook County to Chester, Maine, in Penobscot County. The proposed corridor passes through the towns of Oakfield, Linneus, T3R4, T4R4, Glenwood Plantation, Reed Plantation, North Yarmouth Academy Grant Township, Macwahoc Plantation, Molunkus Township, Mattawamkeag, Woodville, and Chester. The proposed transmission line corridor parallels the existing MEPCO transmission line from Glenwood Plantation to Chester and parallels the Line 56 corridor to the substation. The proposed corridor is located in forested areas.

Topography across the length of the proposed corridor generally consists of flat lowlands with a few rolling hills. Evidence of historic and current timber management activities is present across the length of the proposed transmission line corridor. The proposed corridor primarily runs through uninhabited forest areas, with very few seasonal camps located near the corridor. The corridor crosses six paved roads, including Pea Ridge Road, Route 116, Medway Road (State Route 157), Aroostook Road, Silver Ridge Road (U.S. Route 2), Dixie Road, and South Oakfield Road. For the middle half of the line, the corridor parallels the MEPCO right-of-way (ROW), which is roughly parallel to U.S. Route 2A. Tree stands and hunting camps are present along the cleared ROW.

The project area consists of generally well-drained soils on flat to moderate slopes, mainly silty loams at higher elevations, with varying degrees of rocky and stoniness. The lower elevations consist of moderately to somewhat poorly drained silt loams or mucky organic matter and make up just under half of the soils along the project area. Wetland resources are distributed along the length of the project area, but generally they are concentrated geographically and topographically. Most resources occur as large wetland complexes in lowland areas along the project corridor. Many of the smaller wetlands that occur

are in areas that have been influenced by forest management activities in the past.

The project area is characterized primarily by Spruce-Fir-Northern Hardwood Forest Ecosystem. Natural community features present within the study area include forested uplands and wetlands, scrub-shrub wetlands, emergent wetlands, large rivers, small streams, marshes, bogs, and open water. The project area consists of a variety of natural community types including, but not limited to, Spruce-Northern Hardwoods Forest, Beech-Birch-Maple Forest, and Red Oak-Northern Hardwoods-White Pine Forest. Typical upland species present in the canopy of this forested portion include red spruce (*Picea rubens*), white pine (*Pinus strobus*), sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), red oak (*Quercus rubra*), yellow birch (*Betula alleghaniensis*), and balsam fir (*Abies balsamea*). The shrub layer is dominated by the aforementioned tree species, along with red raspberry (*Rubus idaeus*), beaked hazelnut (*Corylus cornuta*), witch-hazel (*Hamamelis virginiana*), hobblebush (*Viburnum lantanoides*), fly honeysuckle (*Lonicera canadensis*), and gray birch (*Betula populifolia*). The herbaceous layer consists mainly of Canada dwarf-dogwood (*Chamaepericlymenum canadense*), evergreen wood fern (*Dryopteris intermedia*), Christmas fern (*Polystichum acrostichoides*), and Canada mayflower (*Maianthemum canadense*).

Wildlife observations by Stantec field biologists were made throughout the vernal pool surveys, wetland delineations, and RTE surveys. A list of observed wildlife species is available in Section 7, Appendix B of this application.

### 3.2 WETLAND AND WATERBODY DELINEATION RESULTS

A total of 480 wetlands were identified within the project area. The wetlands correspond to numbered wetlands shown in the attached Resource Maps, which are numbered starting at the south end of the corridor in Chester and ending in Oakfield. Stantec also identified 47 streams along the length of the corridor. Thirty-six of the streams were determined to be perennial, and 11 were determined to be intermittent. The proposed corridor crosses 16 named rivers and streams: Medunkeunk Stream, Ebhorse Stream, Eagle Stream, Penobscot River, Mattaseunk Stream, Little Molunkus Stream, Molunkus Stream, Arbo Brook, Macwahoc Stream, Wytopitlock Stream, Smith Brook, Battle Brook, Babcock (Alder) Brook, West Branch Mattawamkeag River, East Branch Mattawamkeag River, and Beaver Brook. Appendix A Table A-1 provides the wetland identifier, wetland classification, stream identifiers, vernal pool identifiers, presence and type of *Wetlands of Special Significance*, and details for each wetland's dominant vegetation, hydric soil characteristics and the hydrological indicators. Appendix A Table A-2 provides the stream identifier, associated wetland identifier, stream type, USGS name (as applicable), and stream width. Of the 480 wetlands identified, 138 were determined to be *Wetlands of Special Significance*. This designation was made primarily due either to their proximity to a river, stream, or brook, because they contained Significant Wildlife Habitat, or because they contained greater than 20,000 square feet of open water or emergent vegetation. The locations of Significant Wildlife Habitat, Inland Waterfowl/Wading Bird Habitat and Deer Wintering Areas (DWAs), are presented in Figure 3. Corps Wetland Delineation Data Forms are provided in Appendix B.

A total of 43 wetlands were identified that are associated with proposed permanent access roads along the length of the corridor are detailed in Table A-3: Permanent Access Road Wetland Table. A total of 5 forested wetlands, 6 scrub-shrub wetlands, and 32 emergent wetlands will be permanently impacted. These wetlands are associated with pre-existing roads in various stages of disrepair.

### 3.3 VERNAL POOL SURVEY RESULTS

In total, Stantec identified 137 vernal pools along the proposed transmission line corridor. The majority of the vernal pools identified were determined to be man-made, with 44 of the vernal pools naturally occurring. Most of the man-made vernal pools are located either in all-terrain vehicle trails, in borrow pits created near road crossings, or in vehicular ruts formed by skidders or other logging equipment. Based on the definitions set forth in the NRPA, a vernal pool must be natural in order for it to be considered Significant. Of the natural vernal pools identified, 11 were found to be SVPs as defined by the NRPA. These 11 SVPs are located across the length of the proposed transmission line. Each vernal pool

identified during Stantec's survey is located within a jurisdictional wetland. The associated wetland in which each vernal pool is located is provided in Appendix A Table A-1. The vernal pools are also presented on the attached Resource Maps. A comprehensive table detailing amphibian breeding activity and use by vernal pool-dependent species in each pool is presented in Appendix C.

An additional 9 vernal pools were identified in areas proposed for access road creation/improvement during the 2011 vernal pool season. One pool was determined to be naturally occurring and modified by the existing road. As defined by NRPA, this pool was determined to be an SVP.

### 3.4 RARE, THREATENED, & ENDANGERED SPECIES SURVEY RESULTS

Four RTE plant species were observed within the project area: showy lady's slipper (*Cypripedium reginae*), marsh valerian (*Valeriana uliginosa*), swamp fly-honeysuckle (*Lonicera oblongifolia*), and small yellow water crowfoot (*Ranunculus gmelinii*). Their locations are shown on the Resource Maps 25-27 presented in this report. Further information about this survey is available in Section 9; MNAP rare plant data forms are available in Appendix 9-1.

Showy lady's slipper was observed in wetlands GLE351 and GLE359. The approximately 30 plants observed in wetland GLE351 occurred on the southern edge of the corridor, associated with the openings created by the existing power line right-of-way (ROW). The approximately 460 plants observed in wetland GLE359 were not adjacent to an existing ROW, but scattered throughout the wetland in concentrated clumps. Show lady's slipper is ranked S3 and listed as Threatened in Maine.

Marsh valerian was observed growing throughout wetland GLE359. Marsh valerian is ranked S2 and listed as Special Concern in Maine. More than 50 plants were observed, all flowering and scattered throughout the wetland.

Swamp fly-honeysuckle was observed in several wetlands along the proposed corridor in Glenwood (GLE343, GLE350, GLE359, GLE351). This species is ranked S3 and listed as Special Concern in Maine. A total of 100 plants were observed and it prefers the open and patchy canopy found in the open forested wetland.

Small yellow water crowfoot was observed in wetland GLE354 and GLE359. One population is associated with a beaver (*Castor canadensis*) impoundment and its slow moving stream (a tributary to Alder Brook), and the other is associated with a backwater overflow of Alder Brook. More than 300 plants were observed, with 10 of those plants flowering. Small yellow water crowfoot is ranked S2 and listed as Threatened in Maine.

MNAP has identified an exemplary Streamshore Ecosystem along Alder Brook in Glenwood Plantation that crosses approximately nine acres. Directly adjacent to the stream, the community meets the description of the Sweetgale Mixed Shrub Fen. This natural community is most accurately described as exemplary because no recent harvest was observed at the stream crossing and because of its proximity to harvest activity.

The MNAP program identified a landscape analysis site associated with Skitacook Stream, referred to in their correspondence as Skitacook Stream Flats, as an area for potential rare plant occurrences. Based upon Stantec's surveys the habitat associated with Skitacook Stream is typical of other stream shores in this part of the state. There has been minimal cutting in the vicinity, and an old woods trail and aging snowmobile bridge crosses the stream within the project corridor. Stantec did not observe rare plants within the Project area wetlands that occur in proximity to the Skitacook Stream Flats landscape analysis site.

On June 27, 2010, Stantec heard rusty blackbirds (*Euphagus carolinus*), which is listed as a Species of Special Concern in Maine, calling in wetland GLE354. The open water and scrub-shrub habitat that is preferred by this species occurs throughout the project area. Although it is possible that the rusty blackbird occurs elsewhere along the proposed transmission line, no additional incidental observations

were made. Stantec also observed a wood turtle (*Glyptemys insculpta*), which is listed as a Species of Special Concern in Maine on Babcock Road. This wood turtle had been killed by a passing vehicle and no live wood turtles were observed in the project area.

Stantec scientists visited the major river and stream crossings to survey for rare mussels, focusing on those waterbodies identified in the MNAP response. No rare mussels were observed within the project area, as the habitat at the crossings were not consistent with the habitat requirements for the rare species reported for those sites.

#### 4.0 REGULATORY INFORMATION

##### 4.1 AGENCY CORRESPONDENCE

Full identification of *Wetlands of Special Significance* involves contacting natural resource agencies such as MDEP, MNAP, the Maine Department of Inland Fisheries and Wildlife (MDIFW), USFWS, and the Maine Historic Preservation Commission (MHPC) to determine if there are any documented occurrences of RTE species and communities, or known historic features within or in the vicinity of the project area.

MNAP indicated that there are several rare botanical features documented within the project area. According to the MDIFW, DWAs (i.e., Essential Habitats) are known to occur within the proposed project area. One DWA is located to the west of the project corridor in a wetland along Skitacook Stream and the Project does not intersect that resource. It is important to note that the response from MDIFW only included data for the towns of Oakfield, Island Falls, and T4R3 and did not include information for the remainder of the proposed corridor. The USFWS response indicates that most of the project area falls within the Atlantic Salmon Critical Habitat Area, but it is located outside the Critical Lynx Habitat Area. Responses from the MHPC indicated that additional information is necessary to identify historic properties within or adjacent to the project area. The Penobscot Nation Tribal Administration requests the opportunity to review the design of the corridor at the Penobscot River crossing in order to appropriately comment on the presence of historical sites within the Project area. Agency responses are provided in Appendix F.

The landscape surrounding the project area contains an abundance of wetlands, several of which have been designated by MDIFW as Significant Inland Wading Bird and Waterfowl Habitat and were included in the MDEP agency response documents. Ten of the habitats intersect the Project area (see Figure 3 for locations).

Sites along the East Branch of the Mattawamkeag River have been designated by MDIFW as Essential Habitat for the brook floater (*Alasmidonta varicosa*), creeper mussel (*Strophitus undulates*), and yellow lampmussel (*Lampsilis cariosa*), rare mussels that inhabit flowing water habitat from small streams to large rivers.

##### 4.2 STATE AND FEDERAL WETLANDS REGULATIONS

The MDEP and the Corps regulate the wetlands identified within the project area. Under the provisions of Section 404 of the Clean Water Act, the Corps regulates activities within waters of the United States, which include navigable waters and all their tributaries, adjacent wetlands, and other waters or wetlands where degradation or destruction could affect interstate or foreign commerce. In Maine, wetlands and waterbodies, as well as other protected natural resources, are regulated under M.R.S.A. 38 §§ 480A-480FF, the NRPA.

Projects that do not impact a wetland or projects that impact less than 4,300 square feet of wetland are usually exempt from the NRPA Tier permitting requirements. This exemption does not apply if the impact is: 1) in, on, or over a coastal wetland, great pond, river, stream, or brook; 2) within 25 feet of those resources, or is more than 25 feet and no erosion control is used; 3) in a shoreland zone or a wetland protected by the shoreland zone; 4) part of a wetland with more than 20,000 square feet of open water or emergent vegetation, except artificial impoundments; 5) in a peatland; 6) part of a larger project; or 7) in

Significant Wildlife Habitat. Typically, projects with cumulative impacts to freshwater wetlands between 4,300 and 15,000 square feet are eligible for review under the Tier 1 process. The Tier 2 review process applies to alterations that affect between 15,000 and 43,560 square feet (i.e., 1 acre) of freshwater wetlands. Cumulative freshwater wetlands impacts that exceed 1 acre typically require a Tier 3 review. Impacts to *Wetlands of Special Significance*, rivers, streams and brooks, great ponds, and Significant Wildlife Habitat typically require an Individual Permit.

Stantec identified 138 *Wetlands of Special Significance* within the project area. The wetland numbers and the reasons for this designation are provided in Appendix A Table A-1. Many wetlands along the proposed corridor are classified as *Wetlands of Special Significance* because they are located within mapped Significant Wildlife Habitat (e.g., Inland Waterfowl/Wading Bird Habitat or DWA).

#### 4.3 STATE AND FEDERAL VERNAL POOL REGULATIONS

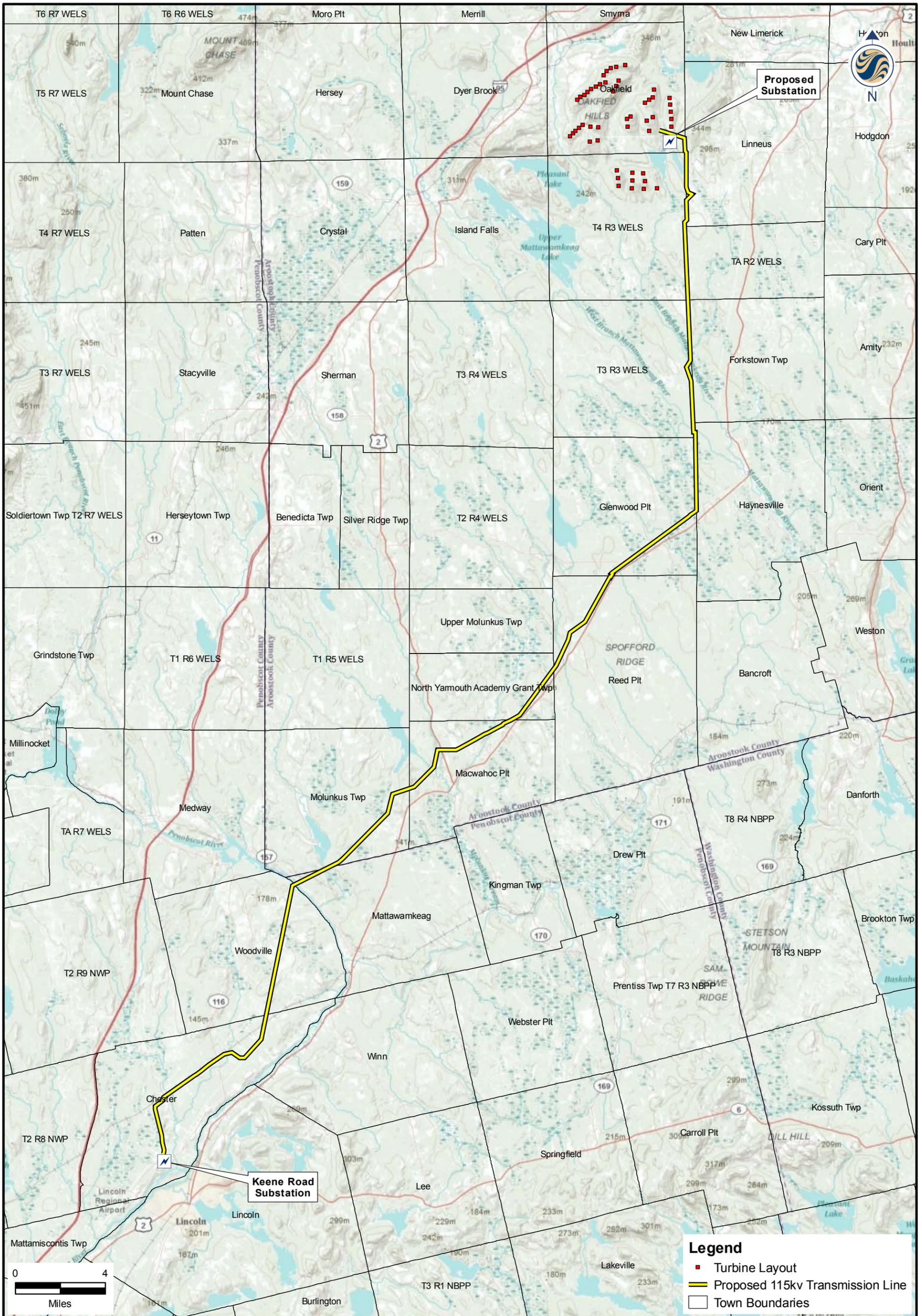
On September 1, 2007, revisions to Chapter 335, which regulates SVPs as Significant Wildlife Habitat, became effective. Chapter 335 details specific definitions and standards regarding the characterization and protection of SVPs in Maine. In summary, unavoidable impacts to an SVP, which includes the critical terrestrial habitat within 250 feet of the high water line of the actual vernal pool, may require an Individual NRPA Permit. The concurrent adoption of a Permit by Rule (PBR), Chapter 305 Section 19, allows some activities within 250 feet of SVPs or Potential SVP if the standards of this PBR can be met. If impacts to the SVP cannot be avoided and the standards for the PBR cannot be met, an Individual Permit may be required.

Certain development projects in Maine may also be regulated under Chapter 375, Site Location of Development (i.e., Site Law). Vernal pools that are ecologically significant on a landscape level may be regulated by MDEP under Site Law. Under some circumstances, setbacks beyond 250 feet may be required by MDEP from these high functioning vernal pools.

The GP for the State of Maine, which was re-issued by the Corps on October 12, 2010, for projects involving "minimal-impact activities", also addresses protection of vernal pools. Under the new Maine GP, the Corps has revised its definition of a vernal pool and adopted specific management standards for vernal pools and their surrounding habitat. The GP also defines a Vernal Pool Management Area (VPMA), which includes the vernal pool plus the area within 750 feet of the pool edge. Projects are required to avoid and minimize impacts within the VPMA. Projects located within the management area must meet a specific set of management practices to be permitted as a Category 1 project. Projects that cannot meet the management practices may require an Individual Permit.

Based on Stantec's field surveys, a total of 137 vernal pools were identified within the project area. The locations of these pools are noted in Appendix A Table A-1. Details for each pool are provided in Appendix C, and the pools are shown on the attached Resource Maps. Of these 137 vernal pools, 41 are naturally occurring of which 10 were determined to meet the criteria to be considered SVPs under Chapter 335 of the NRPA. Of the remaining vernal pools, 95 are not regulated by the State of Maine, but they may still be regulated by the Corps, USEPA, and USFWS.

**Figure 1**  
**Site Location Map**



Prepared By:



**Stantec**

Project:

Revised Oakfield Wind Project  
Penobscot and Aroostook Counties

Sheet Title:

Maine GenLead 115kV Generator  
Lead Transmission Line Corridor

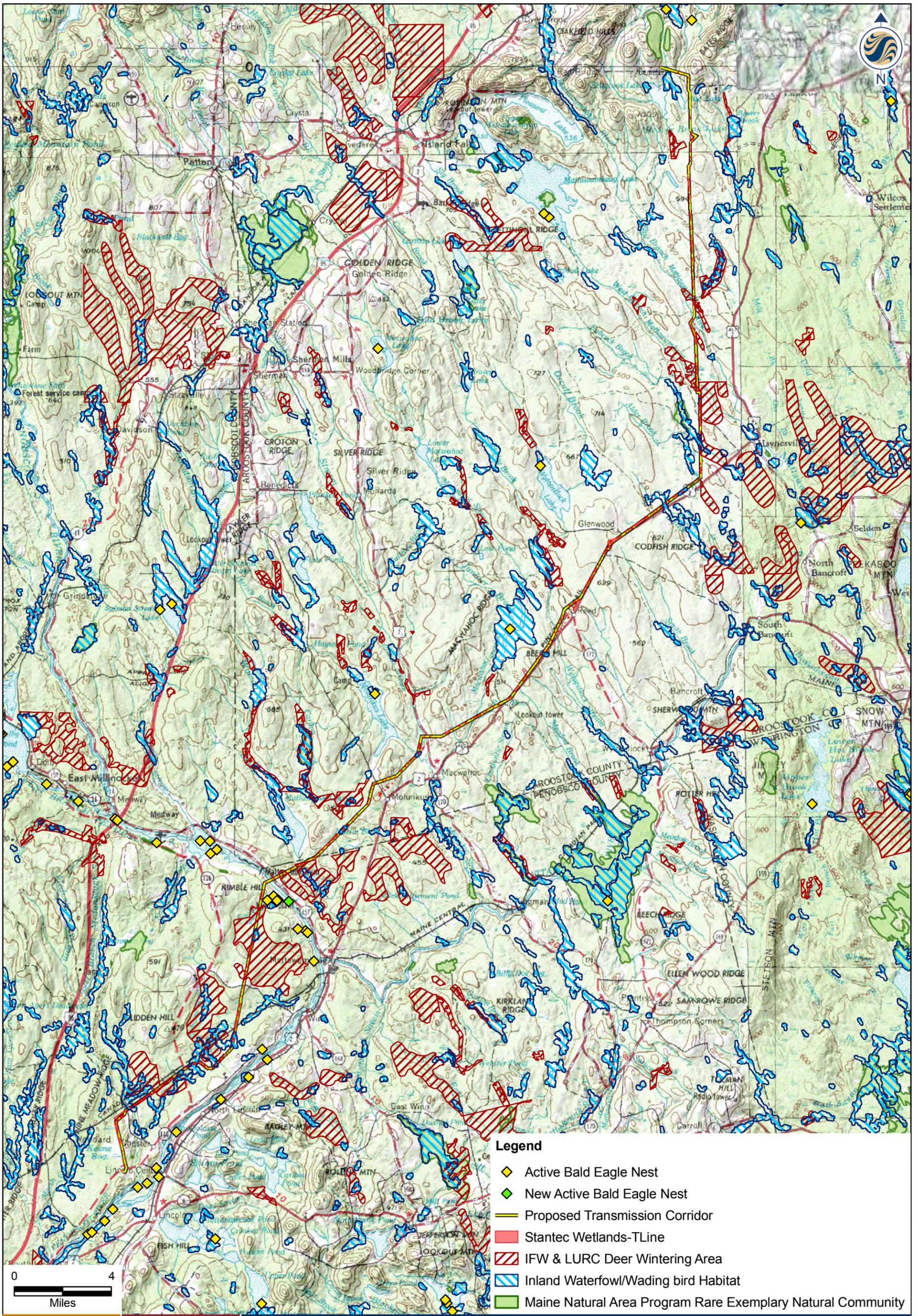
Date: May 2011

Scale: As Shown

Proj. No.: 195600518

Figure: 1

**Figure 2**  
**Resource Maps**



**Stantec Consulting Services Inc.**  
 30 Park Drive  
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 04086  
 Phone (207) 729-1199  
 Fax: (207) 729-2715  
 www.stantec.com

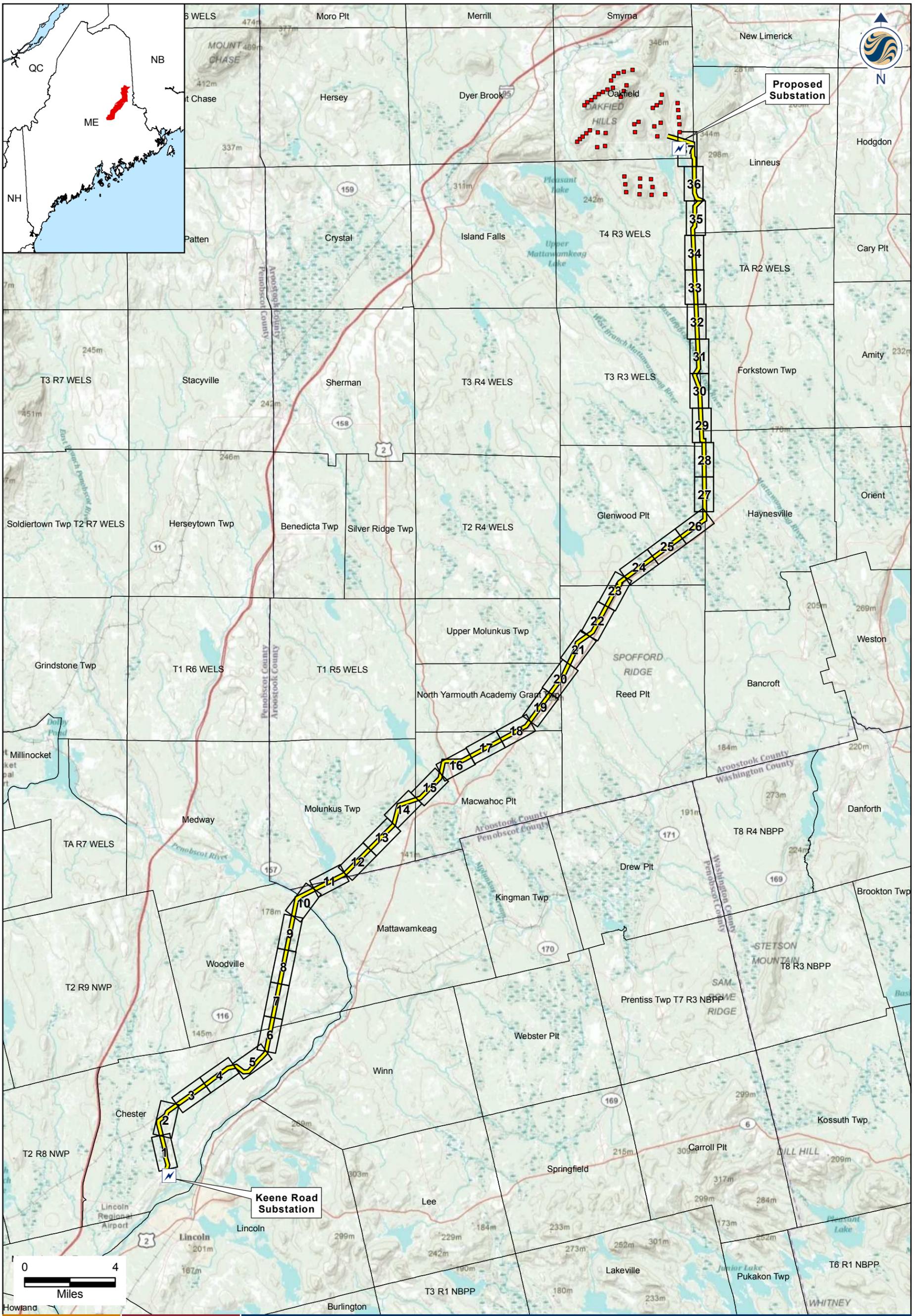
Client/Project  
 Maine GenLead, LLC  
 115kV Transmission Line  
 Aroostook and Penobscot Counties, Maine

Figure No.  
 2

Title  
**Oakfield Transmission Line  
 Wetland Habitat Map**

May 2011

**Figure 3**  
**Significant Wildlife Habitat Maps**



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**Legend**

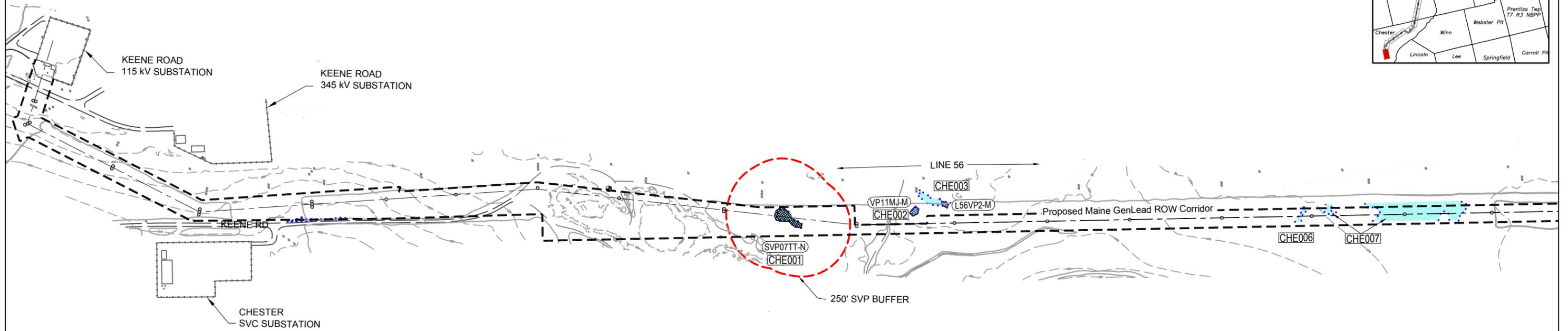
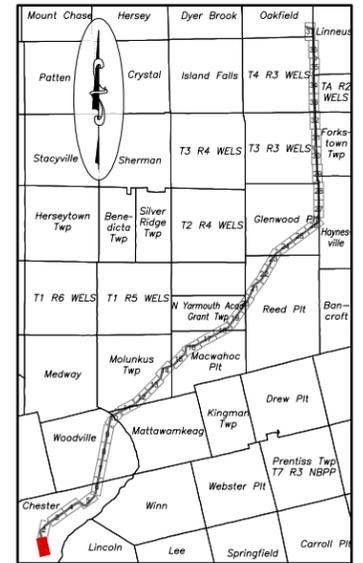
- Proposed Turbine Layout
- Proposed 115kV Transmission Line
- Natural Resource Map Extents

**Client/Project**  
 Maine GenLead, LLC  
 Maine GenLead 115kV Transmission Line  
 Penobscot and Aroostook Counties, Maine

Figure No.

**Key**

Title  
**Proposed Transmission Line  
 Delineated Natural Resource Map**  
 May 2011



- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - Surface drainage



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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec

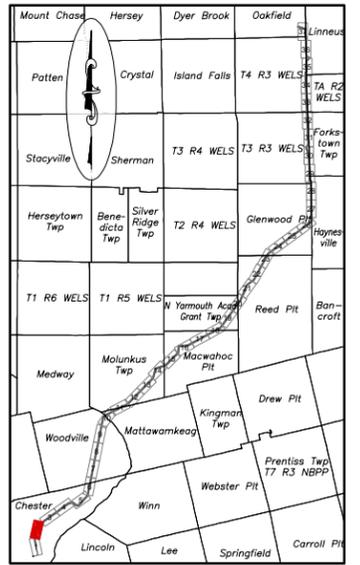
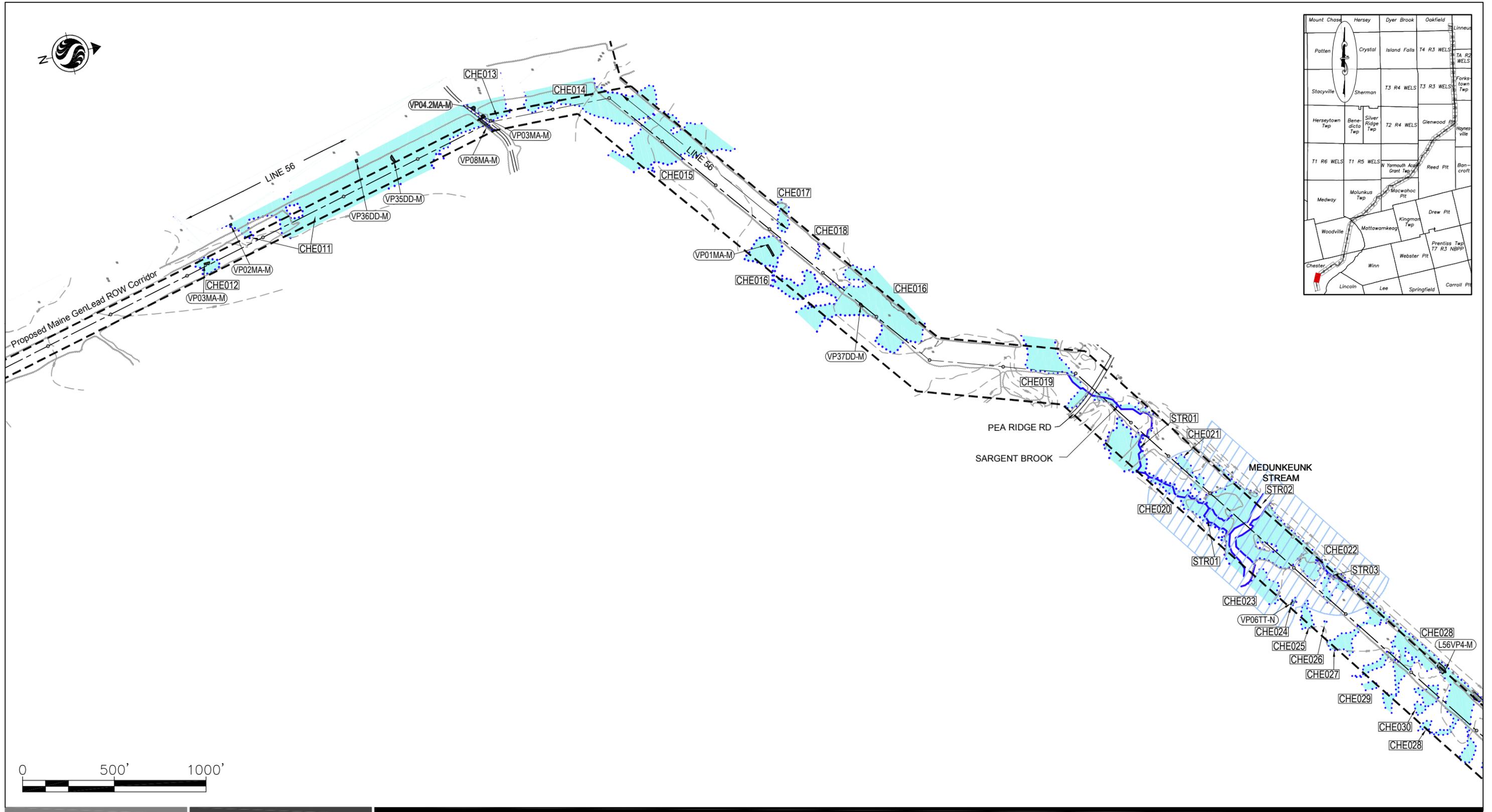
- CHE001 Resource identification
- VP01MA-N Natural vernal pool identification
- VP01MA-M Man-made vernal pool identification
- SVP01DD-N Significant vernal pool identification
- L56VP1 Vernal pool identified by Stantec for Line 56 project, 2007

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**1**  
 Title  
**Delineated Natural Resource Map**

May 2011



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 04086  
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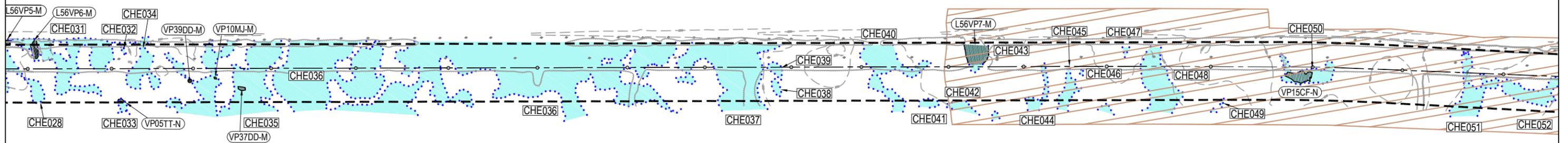
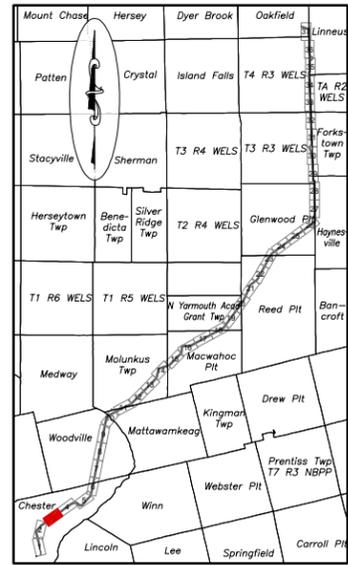
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Legend	
	Proposed transmission line structure
	Proposed transmission corridor and centerline
	Stream identified by Stantec
	Wetland identified by Stantec
	Vernal pool identified by Stantec
	Significant vernal pool identified by Stantec
	Resource identification
	Natural vernal pool identification
	Man-made vernal pool identification
	Significant vernal pool identification
	Vernal pool identified by Stantec for Line 56 project, 2007
	Inland waterfowl and wading bird habitat
	Deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
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3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.
5. State of Maine agency sources for BwH data (IWWH and DWA) include Department of Inland Fisheries and Wildlife, Department of Environmental Protection, and the Department of Conservation.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**2**  
 Title  
**Delineated Natural Resource Map**  
 195600518  
 May 2011



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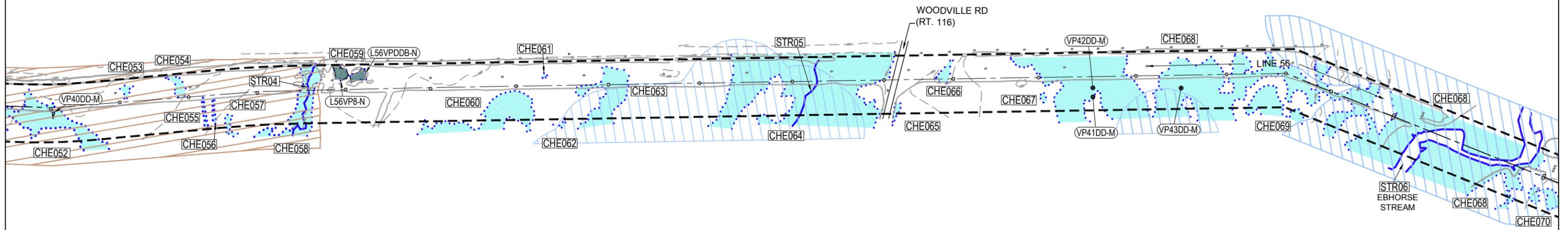
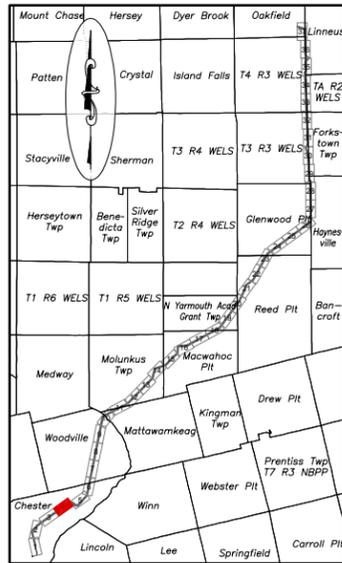
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Legend	
	Proposed transmission line structure
	Proposed transmission corridor and centerline
	Stream identified by Stantec
	Wetland identified by Stantec
	Vernal pool identified by Stantec
	Significant vernal pool identified by Stantec
	Resource identification
	Natural vernal pool identification
	Man-made vernal pool identification
	Significant vernal pool identification
	Vernal pool identified by Stantec for Line 56 project, 2007
	Inland waterfowl and wading bird habitat
	Deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.
5. State of Maine agency sources for BwH data (IWWH and DWA) include Department of Inland Fisheries and Wildlife, Department of Environmental Protection, and the Department of Conservation.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**3**  
 Title  
**Delineated Natural Resource Map**  
 195600518  
 May 2011



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Vernal pool identified by Stantec for Line 56 project, 2007
- Inland waterfowl and wading bird habitat
- Deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
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4. Transmission line design provided by TRC.
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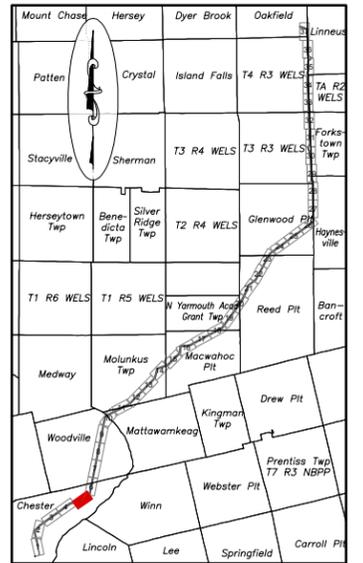
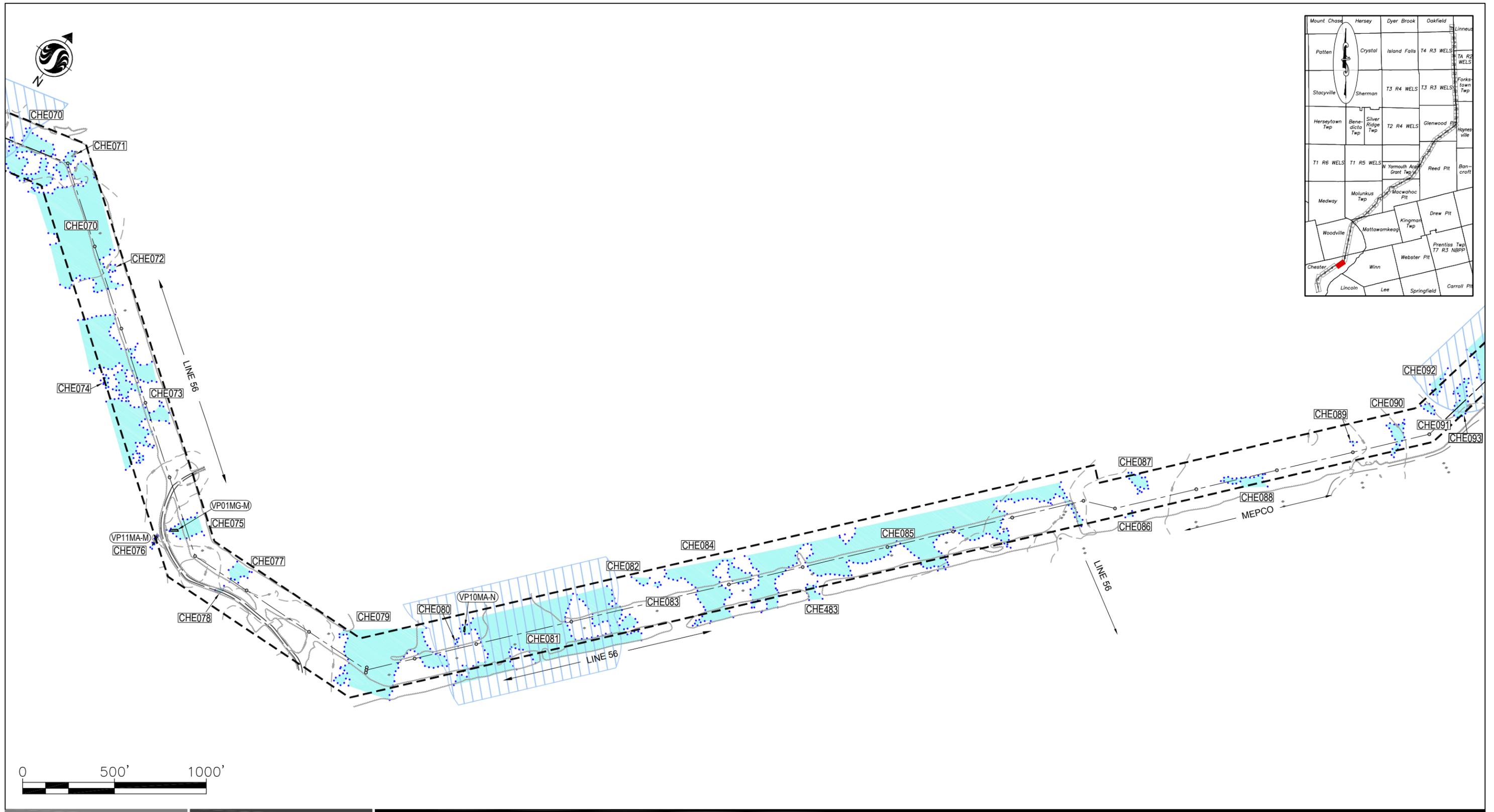
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No.  
**4**

Title  
**Delineated Natural Resource Map**

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00518-1-10-TlineNatResMaps.dwg

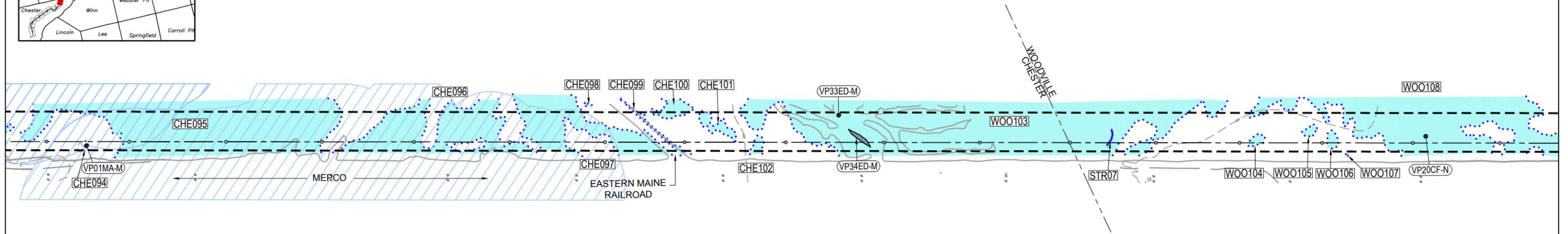
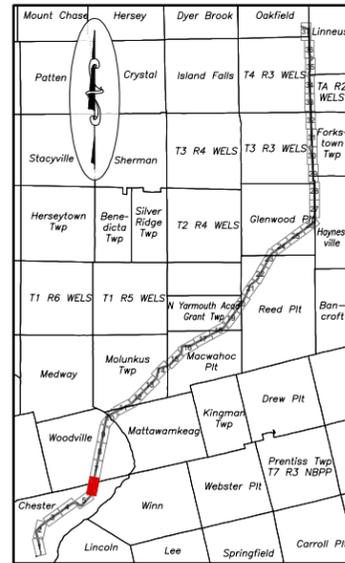
<b>Legend</b>		
Proposed transmission line structure	Resource identification	Resource identification
Proposed transmission corridor and centerline	Natural vernal pool identification	Natural vernal pool identification
Stream identified by Stantec	Man-made vernal pool identification	Man-made vernal pool identification
Wetland identified by Stantec	Significant vernal pool identification	Significant vernal pool identification
Vernal pool identified by Stantec	Inland waterfowl and wading bird habitat	Inland waterfowl and wading bird habitat
Significant vernal pool identified by Stantec	Deer wintering area	Deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
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5. State of Maine agency sources for BwH data (IWWH and DWA) include Department of Inland Fisheries and Wildlife, Department of Environmental Protection, and the Department of Conservation.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**5**  
 Title  
**Delineated Natural Resource Map**  
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195600518



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- Deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
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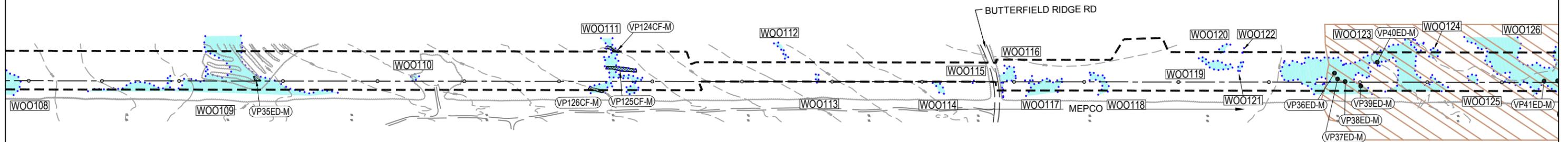
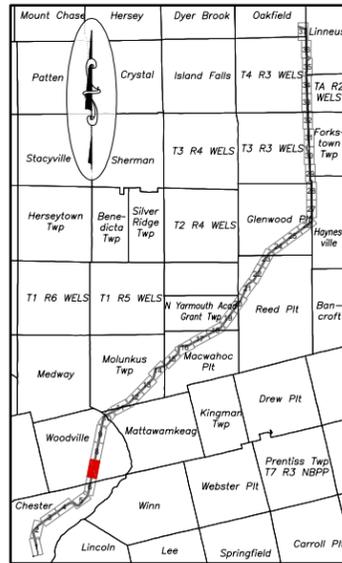
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **6**

Title  
**Delineated Natural Resource Map**

May 2011



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- Deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
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4. Transmission line design provided by TRC.
5. State of Maine agency sources for BwH data (IWWH and DWA) include Department of Inland Fisheries and Wildlife, Department of Environmental Protection, and the Department of Conservation.

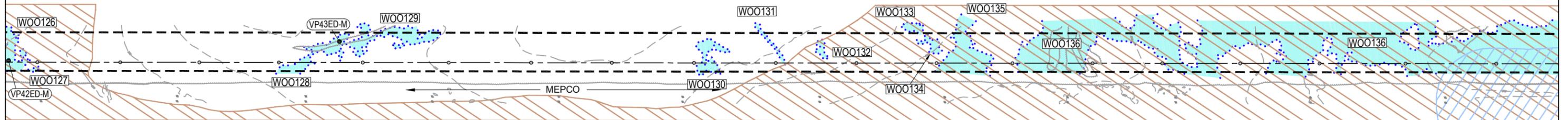
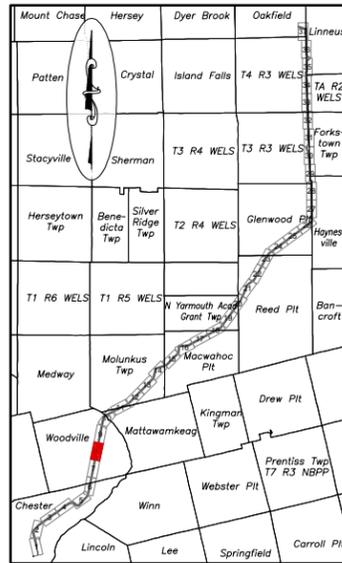
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No.  
**7**

Title  
**Delineated Natural Resource Map**

May 2011



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- Deer wintering area

**Notes**

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2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.
5. State of Maine agency sources for BwH data (IWWH and DWA) include Department of Inland Fisheries and Wildlife, Department of Environmental Protection, and the Department of Conservation.

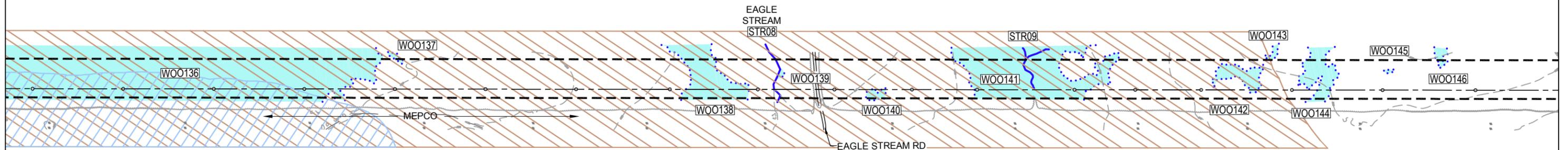
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No.  
**8**

Title  
**Delineated Natural Resource Map**

May 2011



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 Fax. 207.729.2715  
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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- Deer wintering area

**Notes**

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2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
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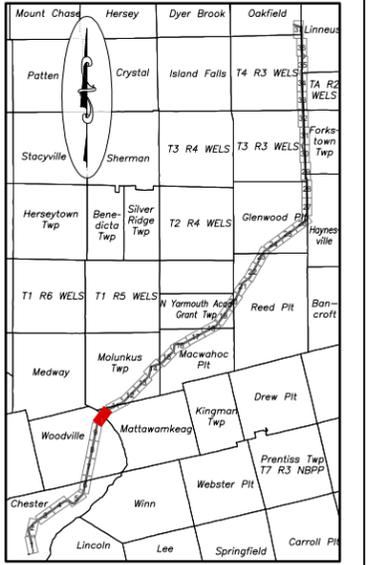
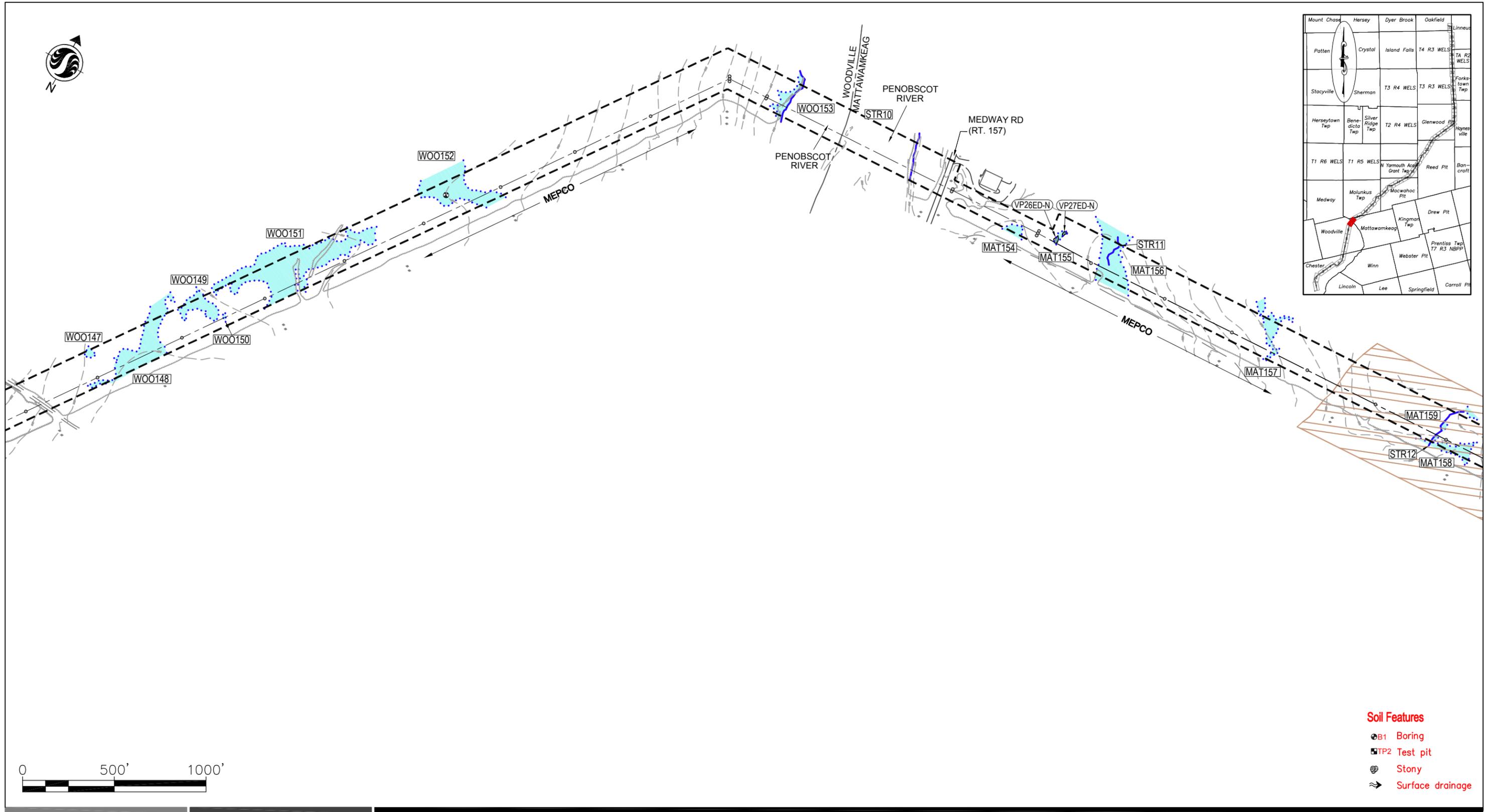
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **9**

Title  
**Delineated Natural Resource Map**

May 2011



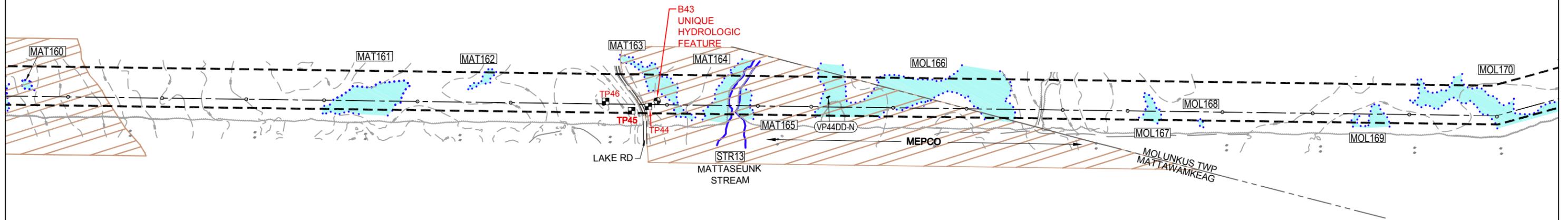
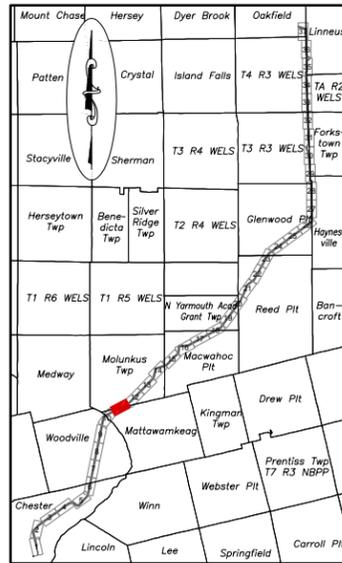
- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - ⊕ Surface drainage

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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - ▨ Vernal pool identified by Stantec
  - ▩ Significant vernal pool identified by Stantec
  - ☐ CHE001 Resource identification
  - ☐ VP01MA-N Natural vernal pool identification
  - ☐ VP01MA-M Man-made vernal pool identification
  - ☐ SVP01DD-N Significant vernal pool identification
  - ▨ Inland waterfowl and wading bird habitat
  - ▨ Deer wintering area

- Notes**
1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
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  4. Transmission line design provided by TRC.
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Client/Project  
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 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No. **10**  
 Title  
**Delineated Natural Resource Map**  
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 May 2011



- Soil Features**
- B1 Boring
  - TP2 Test pit
  - Stony
  - Surface drainage



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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec

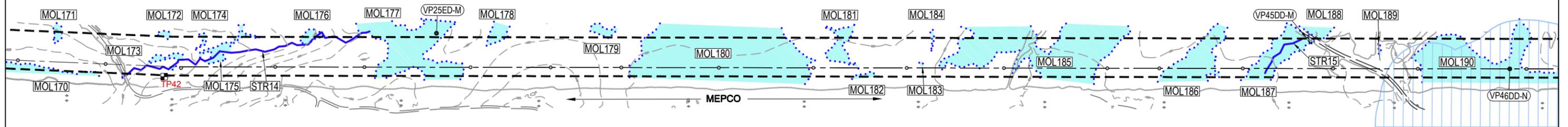
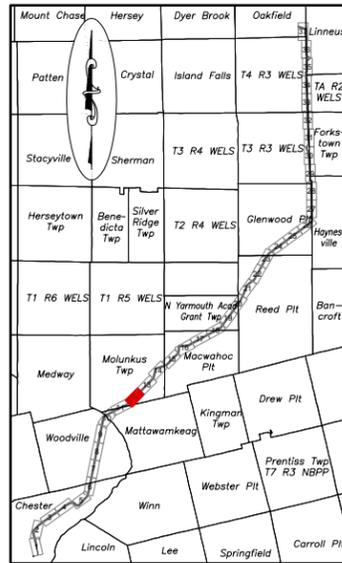
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- Deer wintering area

**Notes**

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Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**11**  
 Title  
**Delineated Natural Resource Map**  
 May 2011

195600518



- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - Surface drainage



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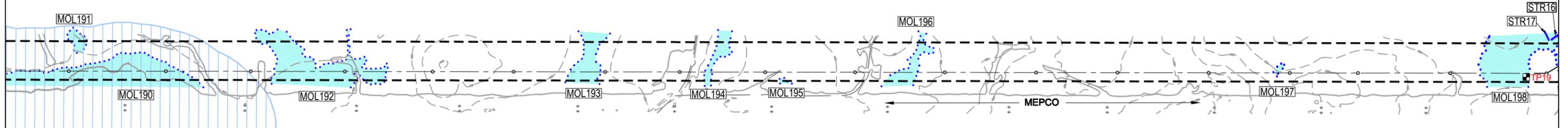
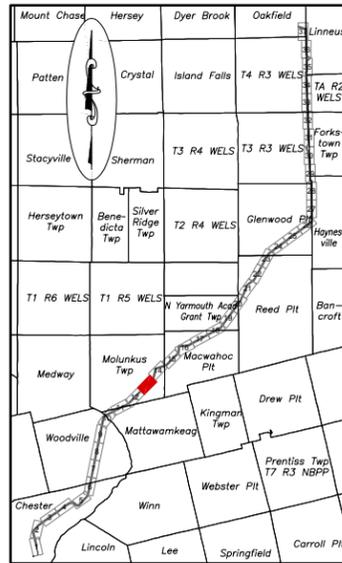
- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - ▨ Vernal pool identified by Stantec
  - ▩ Significant vernal pool identified by Stantec

- Ⓢ(CHE001) Resource identification
- Ⓢ(VP01MA-N) Natural vernal pool identification
- Ⓢ(VP01MA-M) Man-made vernal pool identification
- Ⓢ(SVP01DD-N) Significant vernal pool identification
- ▨ Inland waterfowl and wading bird habitat
- ▩ Deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
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Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**12**  
 Title  
**Delineated Natural Resource Map**  
 195600518  
 May 2011



- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - Surface drainage



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- CHE001 Resource identification
- VP01MA-N Natural vernal pool identification
- VP01MA-M Man-made vernal pool identification
- SVP01DD-N Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- Deer wintering area

**Notes**

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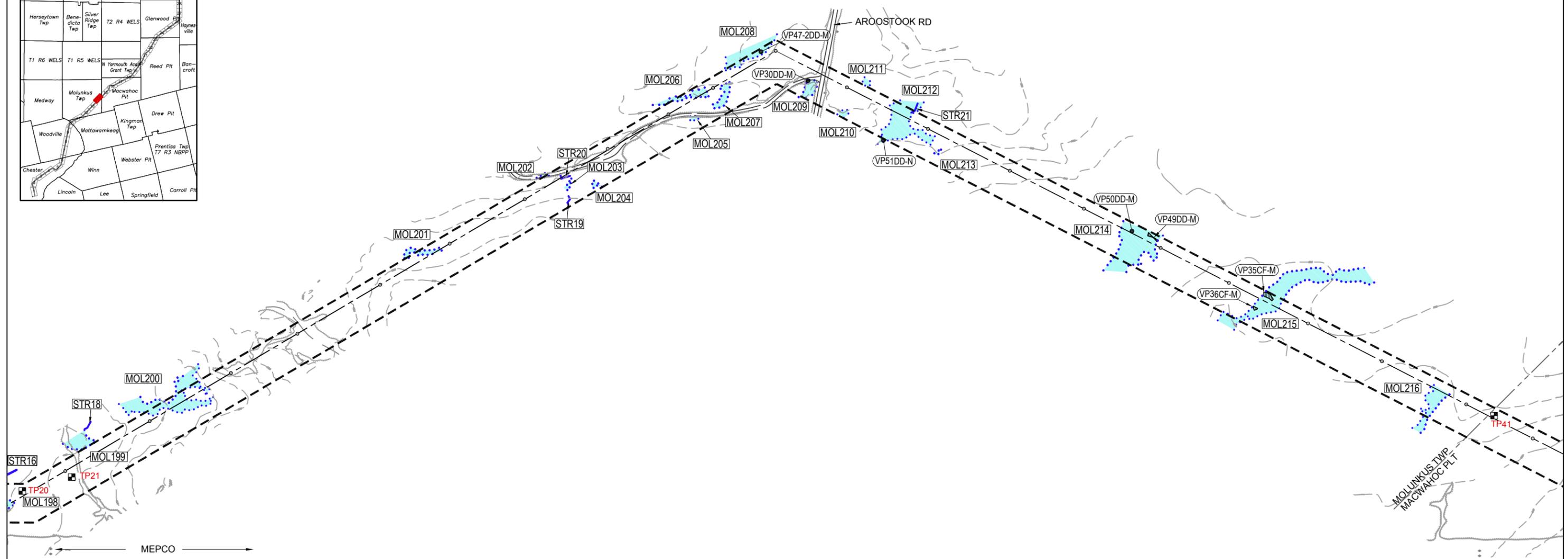
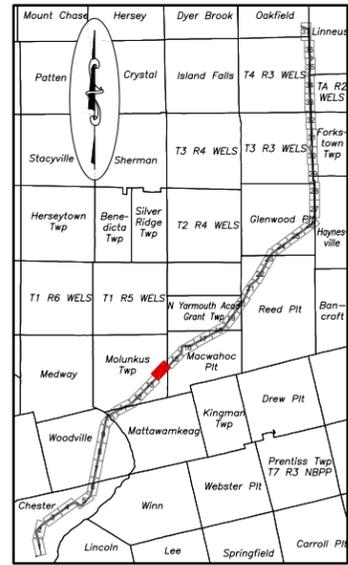
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **13**

Title  
**Delineated Natural Resource Map**

May 2011



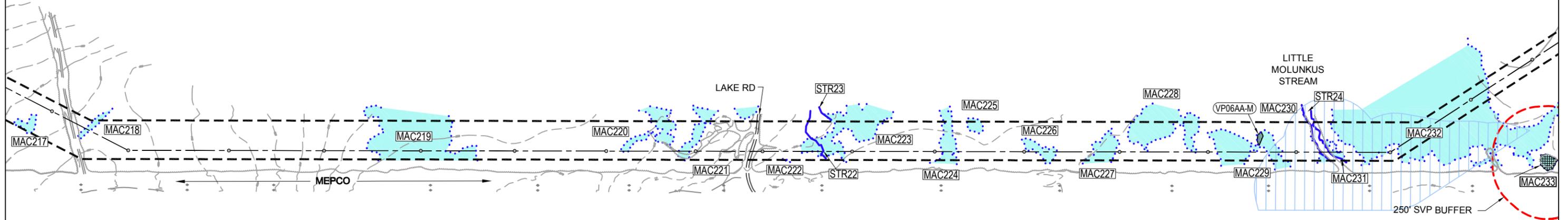
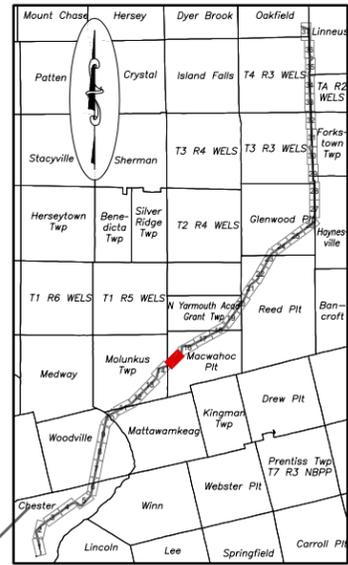
- Soil Features**
- ⊕ B1 Boring
  - ⊠ TP2 Test pit
  - ⊙ Stony
  - ~ Surface drainage

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 Fax. 207.729.2715  
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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec
  - CHE001 Resource identification
  - VP01MA-N Natural vernal pool identification
  - VP01MA-M Man-made vernal pool identification
  - SVP01DD-N Significant vernal pool identification

- Notes**
1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
  2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
  3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
  4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No. **14**  
 Title  
**Delineated Natural Resource Map**



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 04086  
 Tel. 207.729.1199  
 Fax. 207.729.2715  
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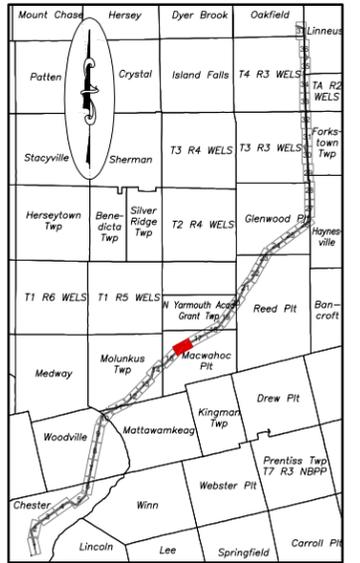
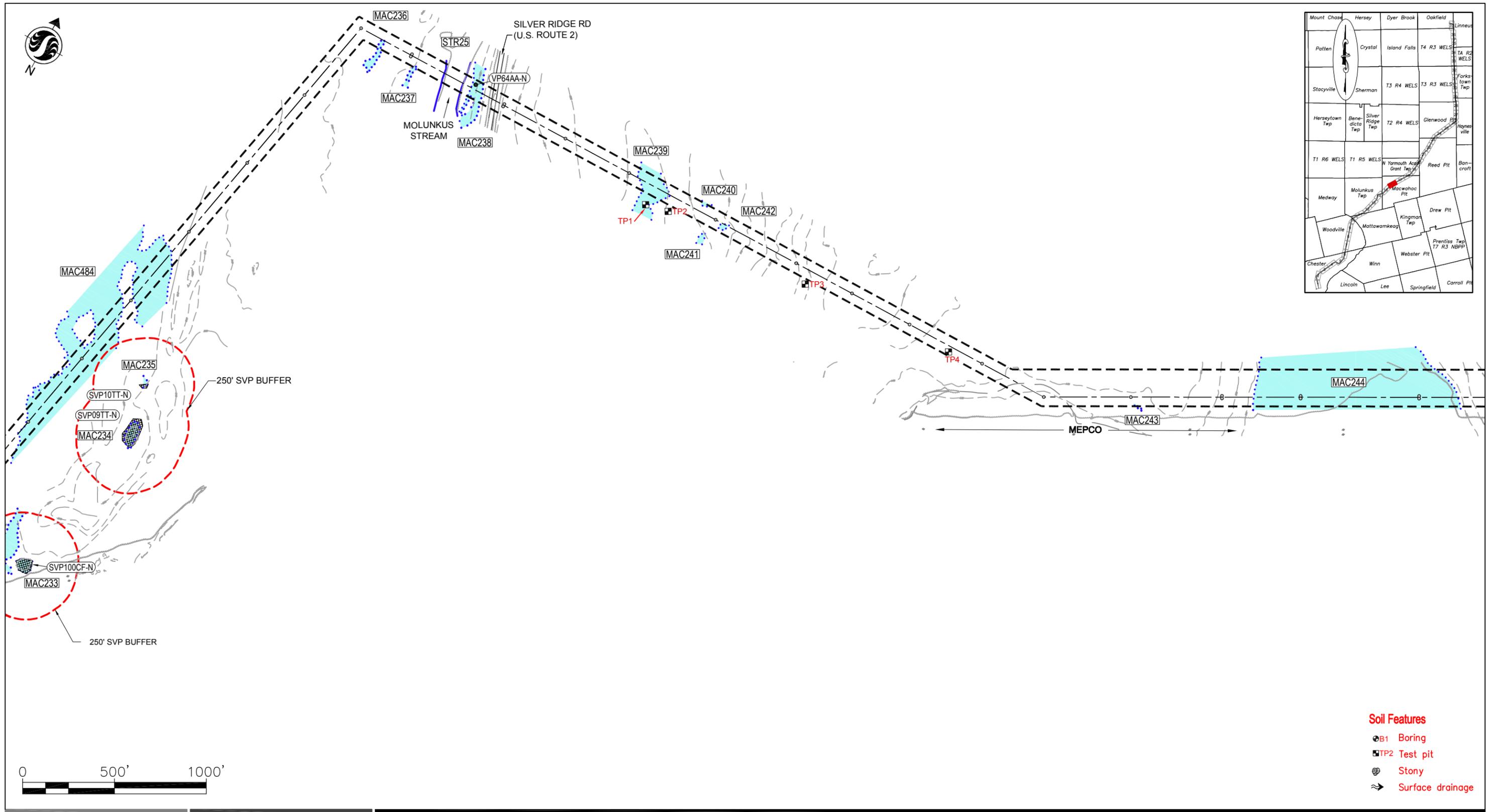
Legend	
	Proposed transmission line structure
	Proposed transmission corridor and centerline
	Stream identified by Stantec
	Wetland identified by Stantec
	Vernal pool identified by Stantec
	Significant vernal pool identified by Stantec
	Resource identification
	Natural vernal pool identification
	Man-made vernal pool identification
	Significant vernal pool identification
	Inland waterfowl and wading bird habitat
	Deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.
5. State of Maine agency sources for BwH data (IWWH and DWA) include Department of Inland Fisheries and Wildlife, Department of Environmental Protection, and the Department of Conservation.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**15**  
 Title  
**Delineated Natural Resource Map**  
 May 2011

195600518



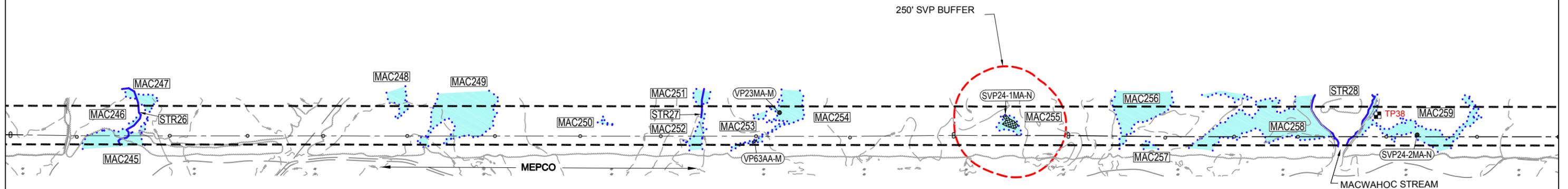
- Soil Features**
- ⊕ B1 Boring
  - ⊠ TP2 Test pit
  - ⊙ Stony
  - ~ Surface drainage

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 Fax. 207.729.2715  
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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec
  - ☐ CHE001 Resource identification
  - ⊕ VP01MA-N Natural vernal pool identification
  - ⊕ VP01MA-M Man-made vernal pool identification
  - ⊕ SVP01DD-N Significant vernal pool identification

- Notes**
1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
  2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
  3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
  4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No. **16**  
 Title  
**Delineated Natural Resource Map**



- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - ↪ Surface drainage



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 Tel. 207.729.1199  
 Fax. 207.729.2715  
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- Legend**
- Proposed transmission line structure
  - — — Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - ▨ Vernal pool identified by Stantec
  - ▩ Significant vernal pool identified by Stantec

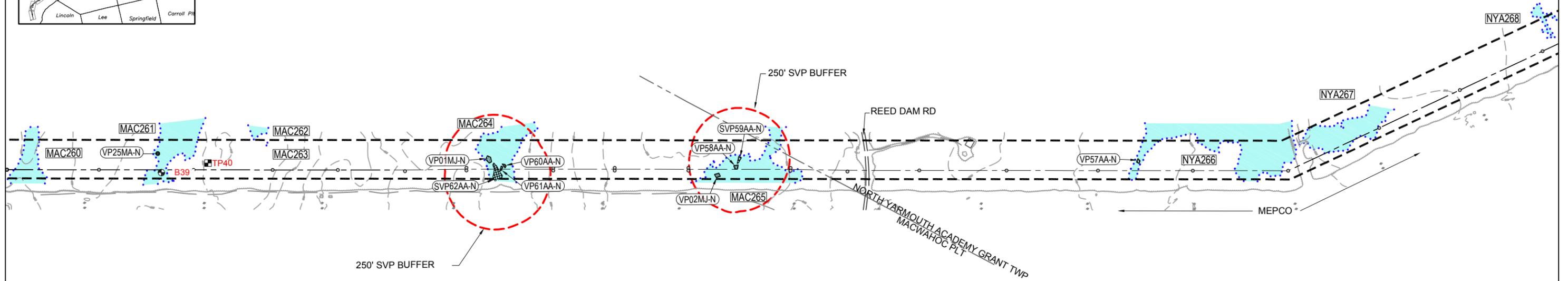
- Ⓢ(CHE001) Resource identification
- Ⓢ(VP01MA-N) Natural vernal pool identification
- Ⓢ(VP01MA-M) Man-made vernal pool identification
- Ⓢ(SVP01DD-N) Significant vernal pool identification

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**17**  
 Title  
**Delineated Natural Resource Map**

May 2011



- Soil Features**
- B1 Boring
  - TP2 Test pit
  - Stony
  - Surface drainage



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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec

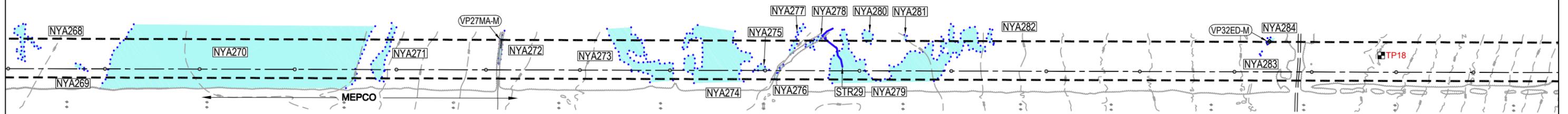
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**18**  
 Title  
**Delineated Natural Resource Map**

May 2011



- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - ↪ Surface drainage



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 Tel. 207.729.1199  
 Fax. 207.729.2715  
 www.stantec.com

- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - ▨ Vernal pool identified by Stantec
  - ▩ Significant vernal pool identified by Stantec

- Ⓢ CHE001 Resource identification
- Ⓢ VP01MA-N Natural vernal pool identification
- Ⓢ VP01MA-M Man-made vernal pool identification
- Ⓢ SVP01DD-N Significant vernal pool identification

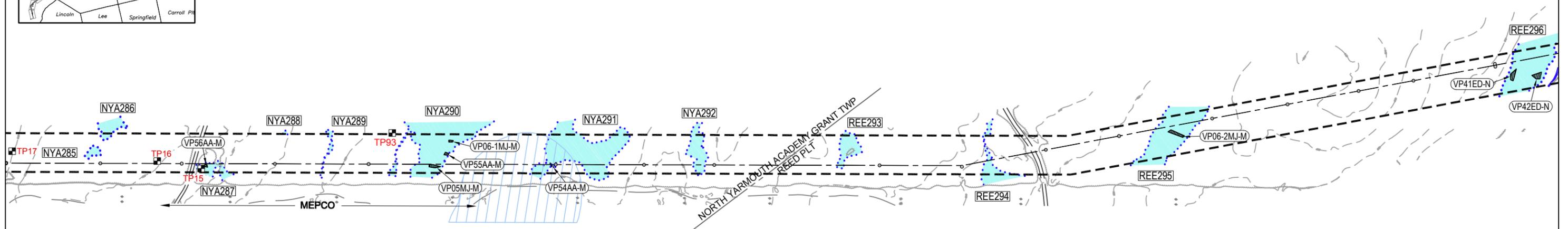
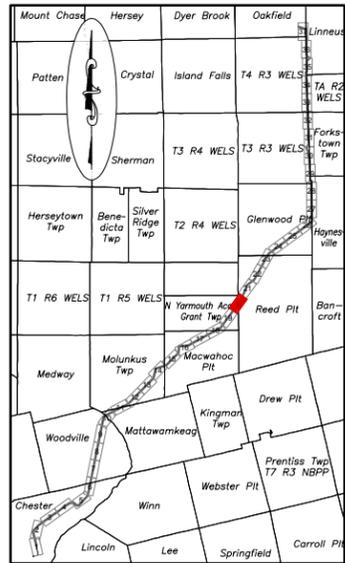
**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**19**  
 Title  
**Delineated Natural Resource Map**

195600518

May 2011



- Soil Features**
- B1 Boring
  - TP2 Test pit
  - Stony
  - Surface drainage



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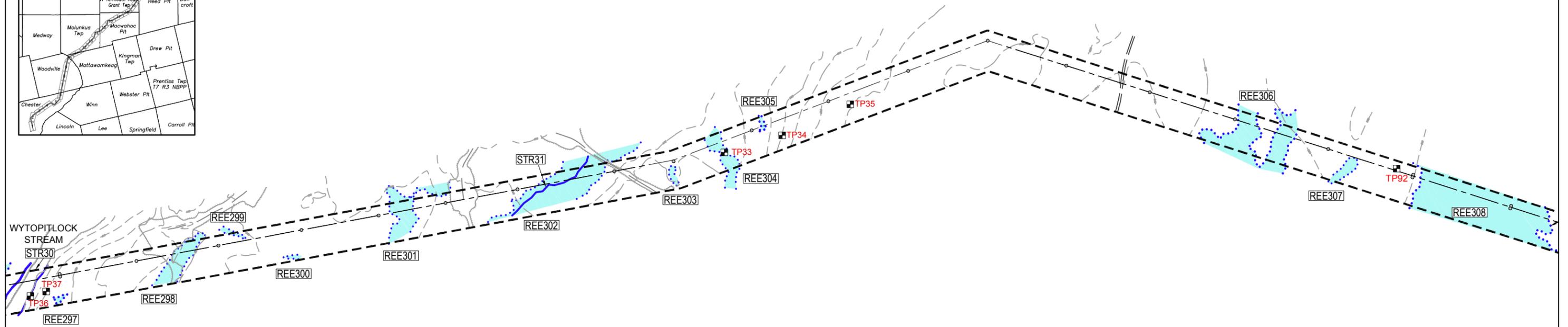
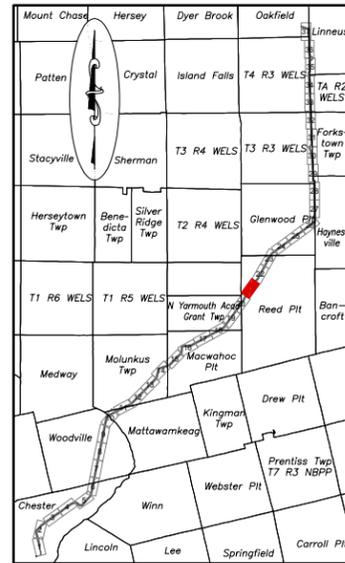
- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec

- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- Deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.
5. State of Maine agency sources for BwH data (IWWH and DWA) include Department of Inland Fisheries and Wildlife, Department of Environmental Protection, and the Department of Conservation.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**20**  
 Title  
**Delineated Natural Resource Map**  
 May 2011



- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - ~ Surface drainage



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 Fax. 207.729.2715  
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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - ▨ Vernal pool identified by Stantec
  - ▩ Significant vernal pool identified by Stantec

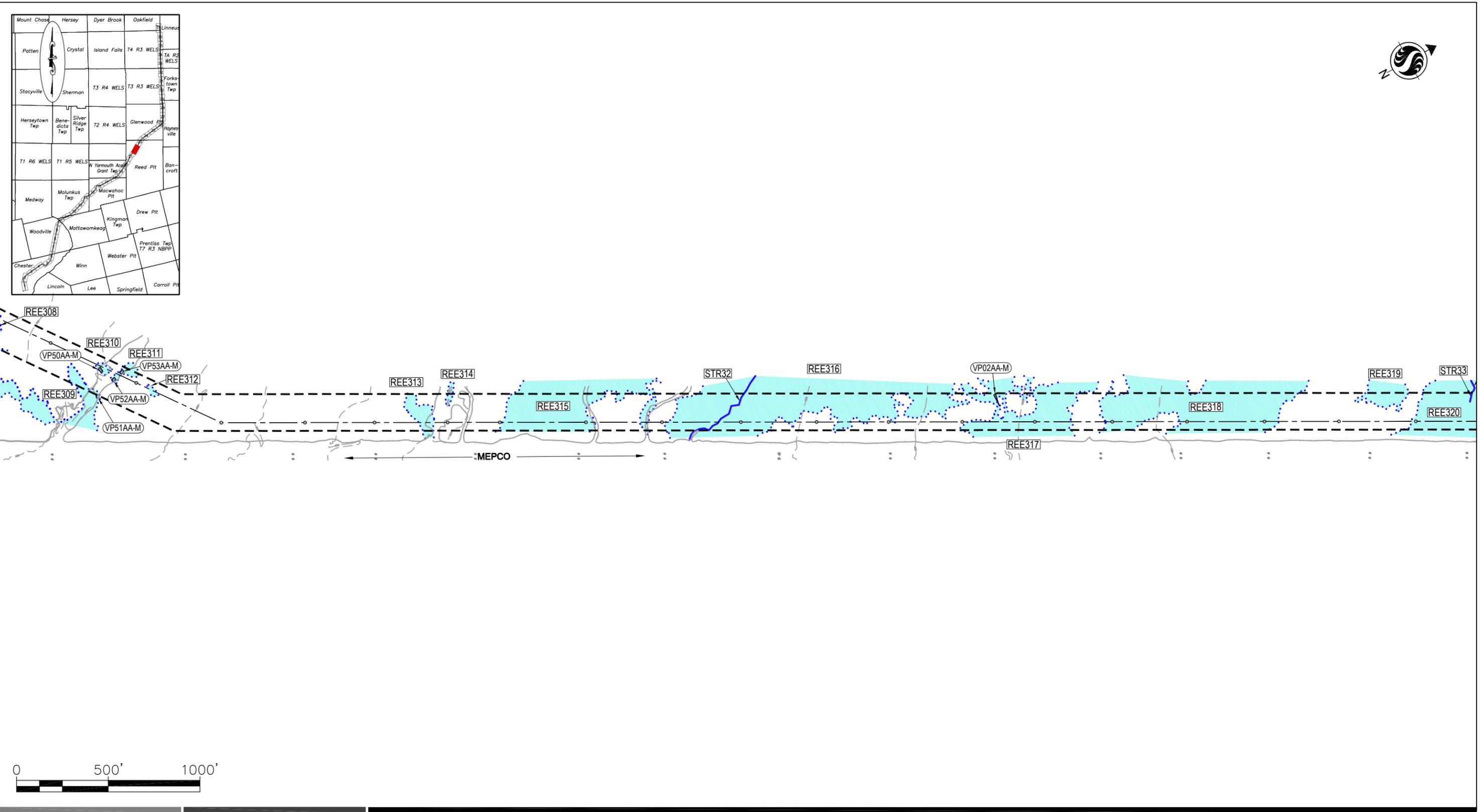
- Ⓢ(CHE001) Resource identification
- Ⓢ(VP01MA-N) Natural vernal pool identification
- Ⓢ(VP01MA-M) Man-made vernal pool identification
- Ⓢ(SVP01DD-N) Significant vernal pool identification

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**21**  
 Title  
**Delineated Natural Resource Map**

May 2011



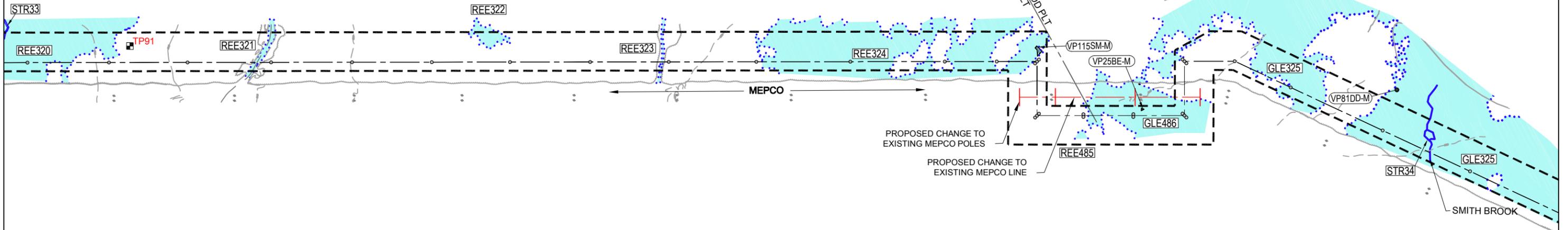
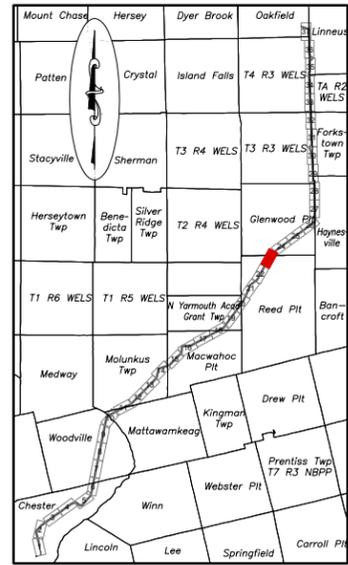
**Stantec Consulting Services Inc.**  
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<b>Legend</b>		
○	Proposed transmission line structure	<b>[CHE001]</b> Resource identification
— — — — —	Proposed transmission corridor and centerline	<b>(VP01MA-N)</b> Natural vernal pool identification
— — — — —	Stream identified by Stantec	<b>(VP01MA-M)</b> Man-made vernal pool identification
▨	Wetland identified by Stantec	<b>(SVP01DD-N)</b> Significant vernal pool identification
▨	Vernal pool identified by Stantec	
▨	Significant vernal pool identified by Stantec	

- Notes**
1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
  2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
  3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
  4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No. **22**  
 Title  
**Delineated Natural Resource Map**  
 195600518



- Soil Features**
- B1 Boring
  - TP2 Test pit
  - Stony
  - ~ Surface drainage



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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - ▨ Vernal pool identified by Stantec
  - ▩ Significant vernal pool identified by Stantec

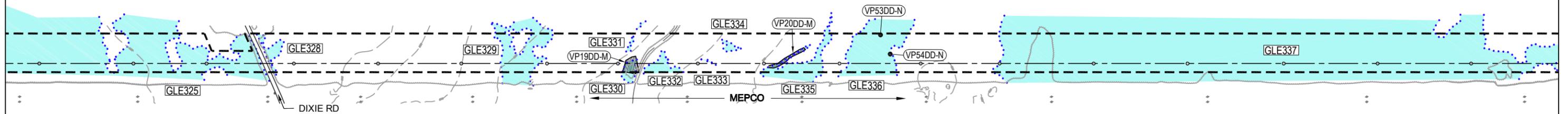
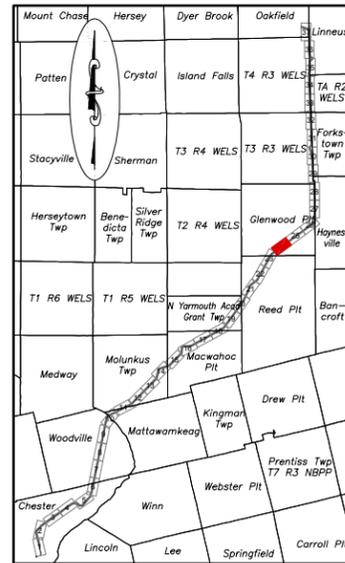
- ☐ CHE001 Resource identification
- VP01MA-N Natural vernal pool identification
- VP01MA-M Man-made vernal pool identification
- SVP01DD-N Significant vernal pool identification

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
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3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**23**  
 Title  
**Delineated Natural Resource Map**

May 2011



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec

- CHE001** Resource identification
- VP01MA-N** Natural vernal pool identification
- VP01MA-M** Man-made vernal pool identification
- SVP01DD-N** Significant vernal pool identification

**Notes**

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3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.

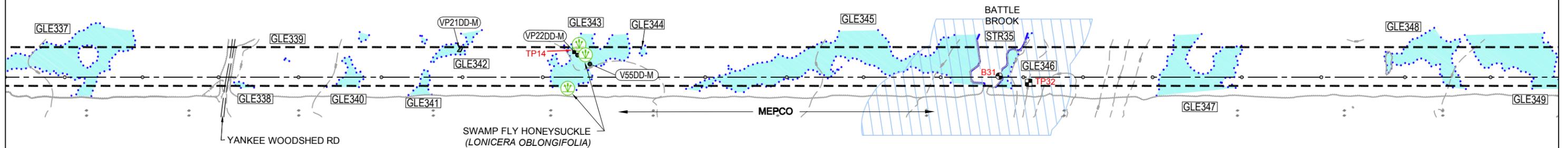
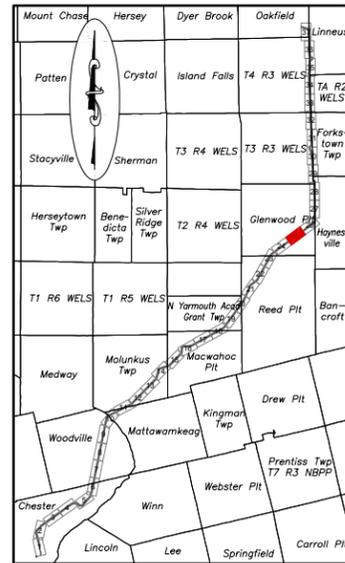
Client/Project 195600518

**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **24**

Title  
**Delineated Natural Resource Map**

May 2011



- Soil Features**
- B1 Boring
  - TP2 Test pit
  - ⊕ Stony
  - ↗ Surface drainage



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- Rare plant habitat identified by Stantec
- CHE001 Resource identification
- VP01MA-N Natural vernal pool identification
- VP01MA-M Man-made vernal pool identification
- SVP01DD-N Significant vernal pool identification
- Rare plant identified by Stantec
- Inland waterfowl and wading bird habitat
- IFW and LURC deer wintering area

**Notes**

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.
5. Rare plant habitat polygons may contain more than one rare or exemplary species and should be considered approximate.
6. IWWH and DWA sources include IF&W, DEP, and the Department of Conservation.

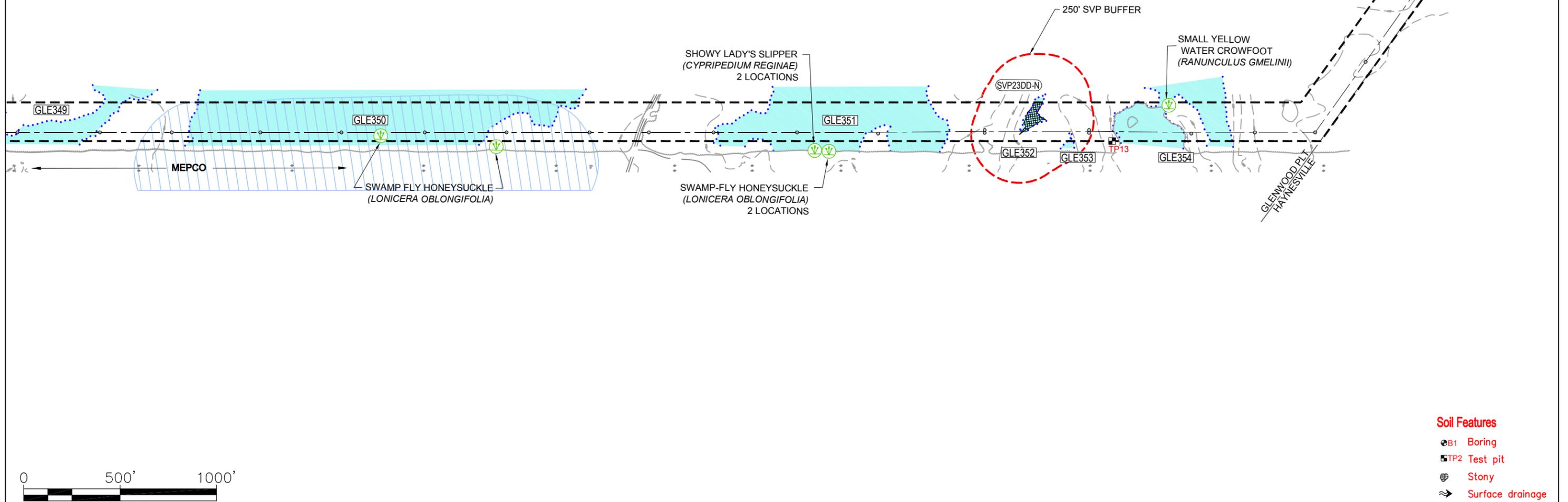
Client/Project 195600518

**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **25**

Title  
**Delineated Natural Resource Map**

May 2011



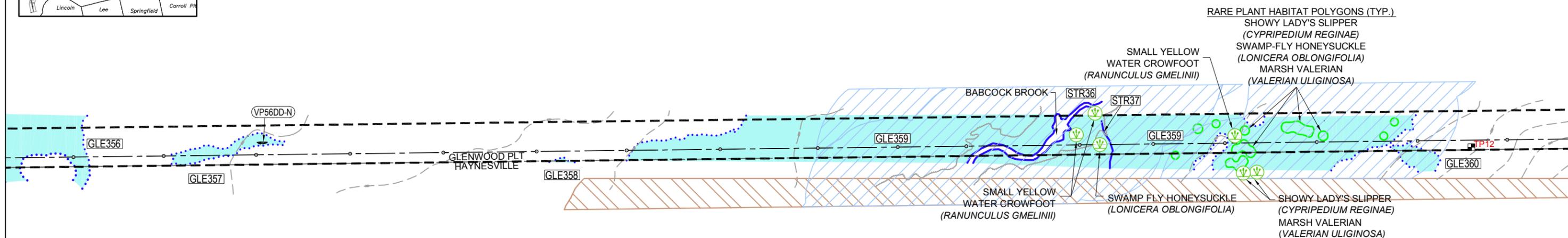
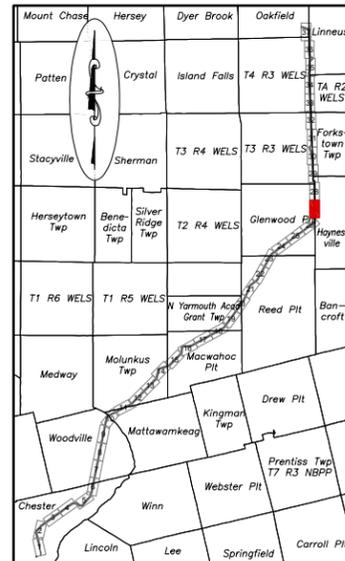
- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - ⊕ Surface drainage

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 Fax. 207.729.2715  
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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec
  - Rare plant habitat identified by Stantec
  - CHE001 Resource identification
  - VP01MA-N Natural vernal pool identification
  - VP01MA-M Man-made vernal pool identification
  - SVP01DD-N Significant vernal pool identification
  - Rare plant identified by Stantec
  - Inland waterfowl and wading bird habitat
  - IFW and LURC deer wintering area

- Notes**
- Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
  - Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
  - Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
  - Transmission line design provided by TRC.
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  - IWWH and DWA sources include IF&W, DEP, and the Department of Conservation.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No. **26**  
 Title  
**Delineated Natural Resource Map**  
 195600518  
 May 2011



- Soil Features**
- B1 Boring
  - TP2 Test pit
  - Stony
  - Surface drainage



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- Rare plant habitat identified by Stantec
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Rare plant identified by Stantec
- Inland waterfowl and wading bird habitat
- IFW and LURC deer wintering area

**Notes**

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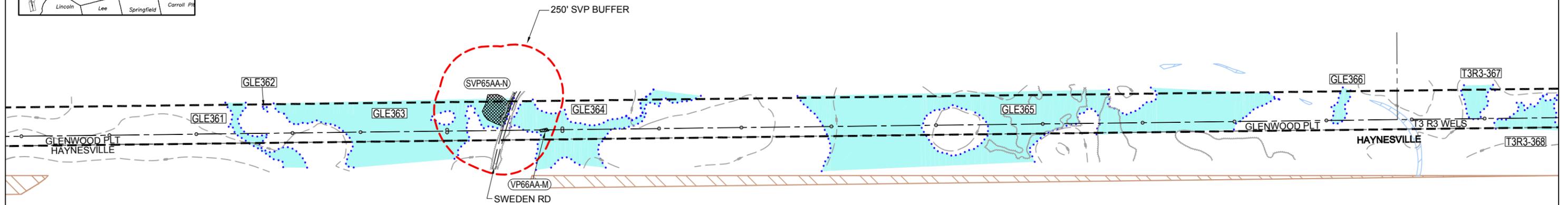
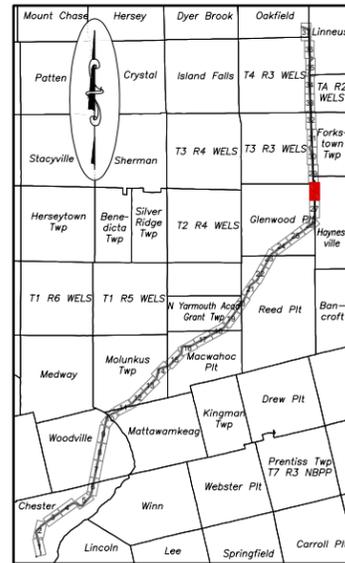
Client/Project 195600518

**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **27**

Title  
**Delineated Natural Resource Map**

May 2011



**Stantec Consulting Services Inc.**

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 Fax. 207.729.2715  
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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- IFW and LURC deer wintering area

**Notes**

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3. Basemap features comprised of photogrammetry obtained from Aerial Survey and Photo, Inc. and USGS topography.
4. Transmission line design provided by TRC.
5. State of Maine agency sources for BwH data (IWWH and DWA) include Department of Inland Fisheries and Wildlife, Department of Environmental Protection, and the Department of Conservation.

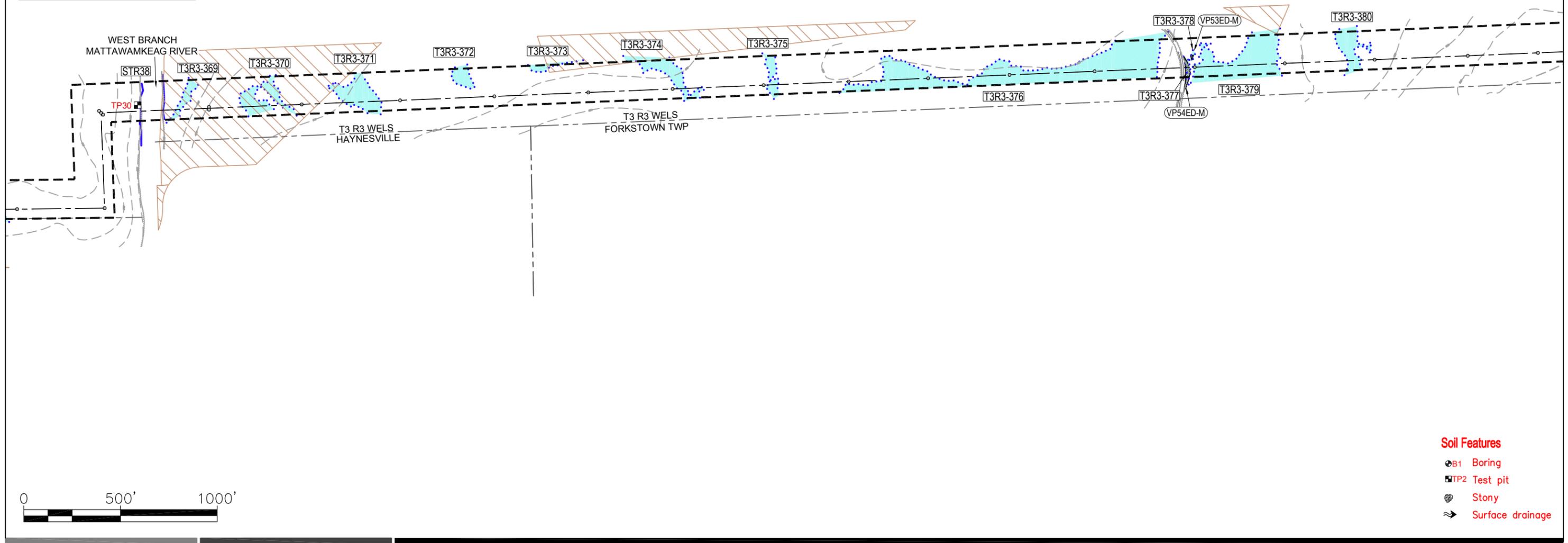
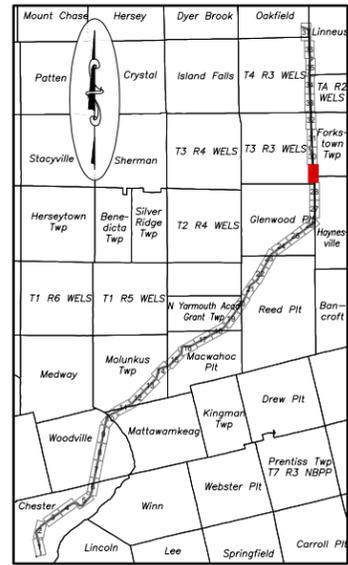
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **28**

Title  
**Delineated Natural Resource Map**

May 2011



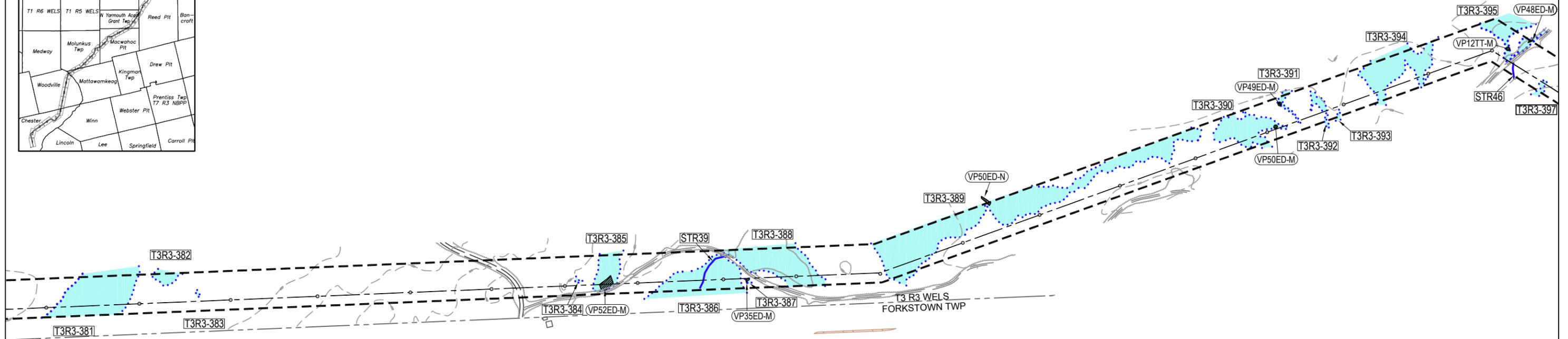
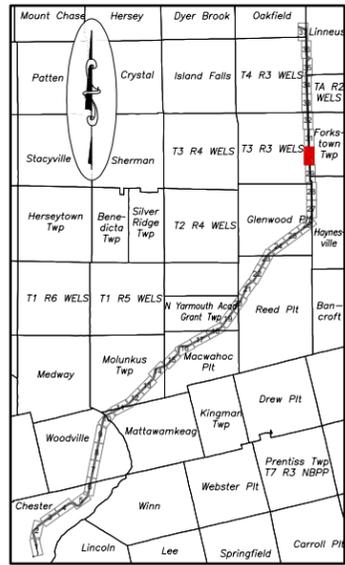
- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - ↪ Surface drainage

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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec
  - ☐ CHE001 Resource identification
  - ☐ VP01MA-N Natural vernal pool identification
  - ☐ VP01MA-M Man-made vernal pool identification
  - ☐ SVP01DD-N Significant vernal pool identification
  - ☐ Inland waterfowl and wading bird habitat
  - ☐ IFW and LURC deer wintering area

- Notes**
- Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
  - Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
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 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**29**  
 Title  
**Delineated Natural Resource Map**  
 195600518  
 May 2011



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- IFW and LURC deer wintering area

**Notes**

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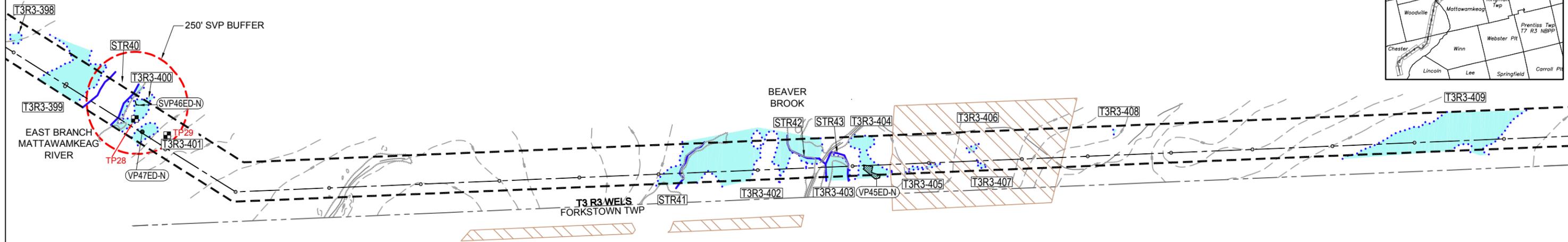
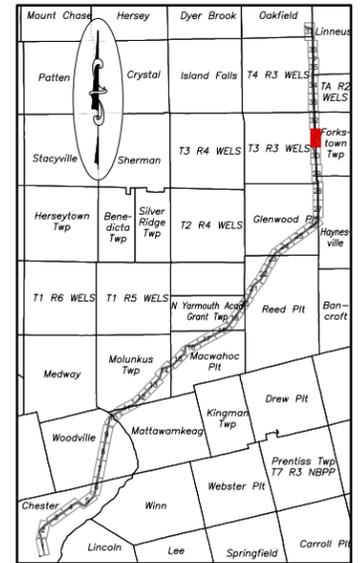
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **30**

Title  
**Delineated Natural Resource Map**

May 2011



- Soil Features**
- ⊕ B1 Boring
  - ⊠ TP2 Test pit
  - ⊙ Stony
  - Surface drainage



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec
- CHE001 Resource identification
- VP01MA-N Natural vernal pool identification
- VP01MA-M Man-made vernal pool identification
- SVP01DD-N Significant vernal pool identification
- Inland waterfowl and wading bird habitat
- IFW and LURC deer wintering area

**Notes**

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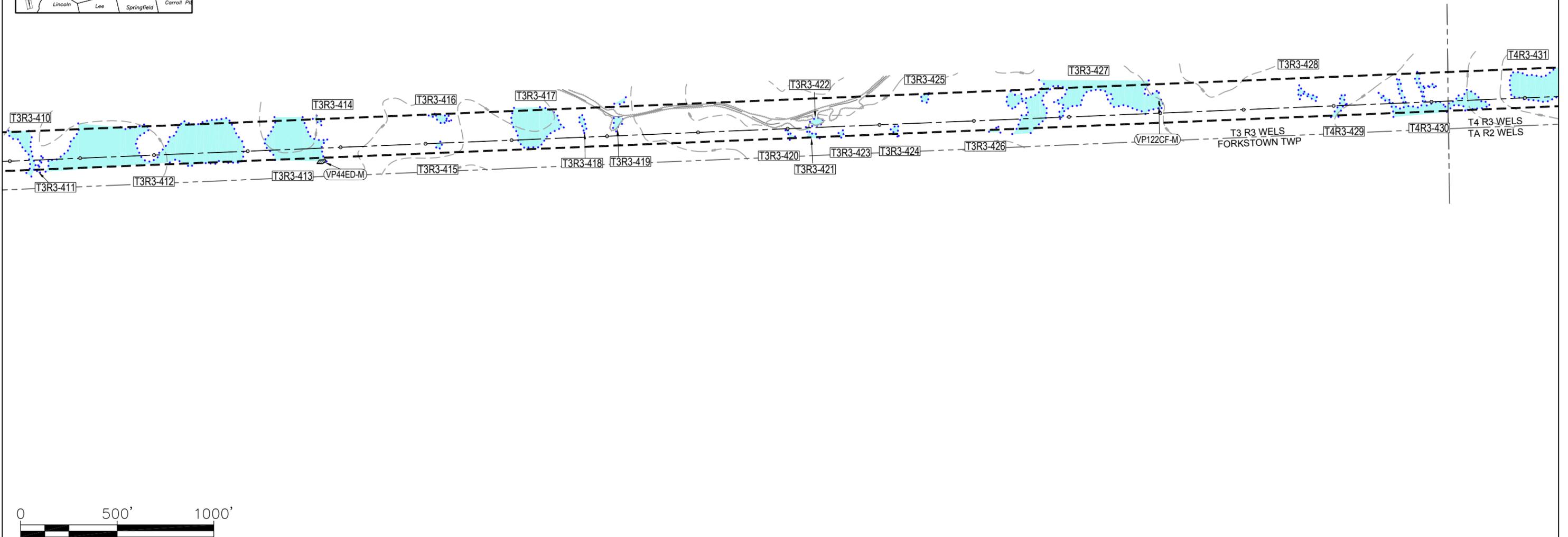
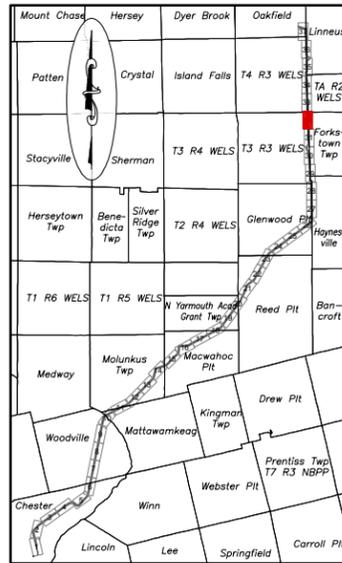
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **31**

Title  
**Delineated Natural Resource Map**

May 2011

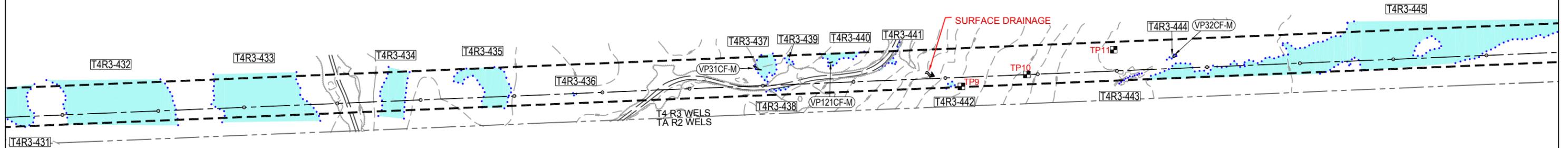
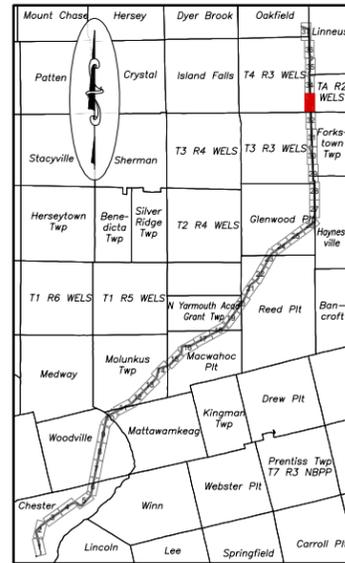


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	Proposed transmission line structure		Resource identification
	Proposed transmission corridor and centerline		Natural vernal pool identification
	Stream identified by Stantec		Man-made vernal pool identification
	Wetland identified by Stantec		Significant vernal pool identification
	Vernal pool identified by Stantec		
	Significant vernal pool identified by Stantec		

- Notes**
1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
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  4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**32**  
 Title  
**Delineated Natural Resource Map**



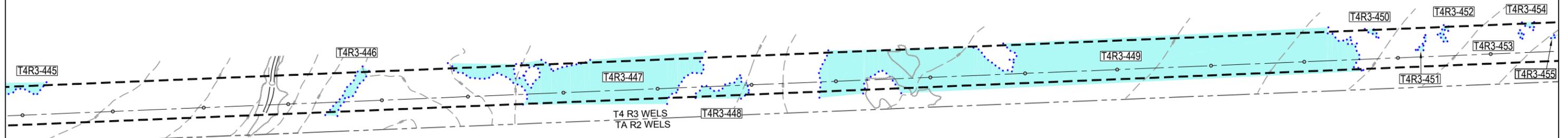
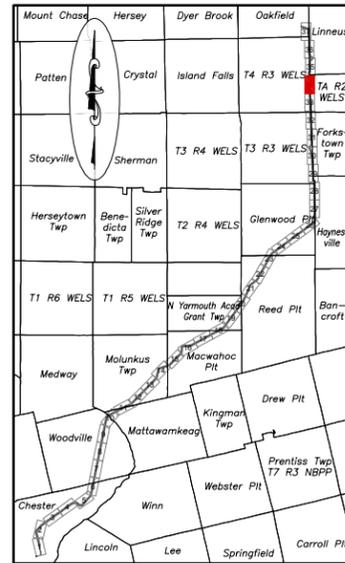
- Soil Features**
- ⊕ B1 Boring
  - ⊕ TP2 Test pit
  - ⊕ Stony
  - ↪ Surface drainage

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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec
  - CHE001 Resource identification
  - VP01MA-N Natural vernal pool identification
  - VP01MA-M Man-made vernal pool identification
  - SVP01DD-N Significant vernal pool identification

- Notes**
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  - Transmission line design provided by TRC.

Client/Project  
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 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No. **33**  
 Title  
**Delineated Natural Resource Map**



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec

- Resource identification
- Natural vernal pool identification
- Man-made vernal pool identification
- Significant vernal pool identification

**Notes**

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4. Transmission line design provided by TRC.

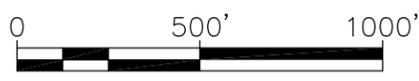
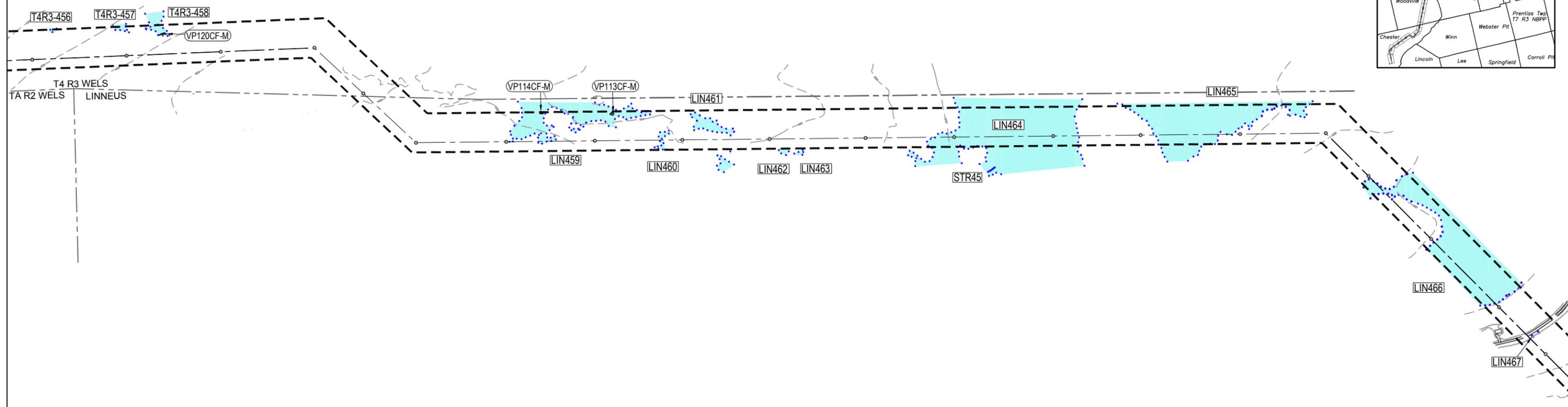
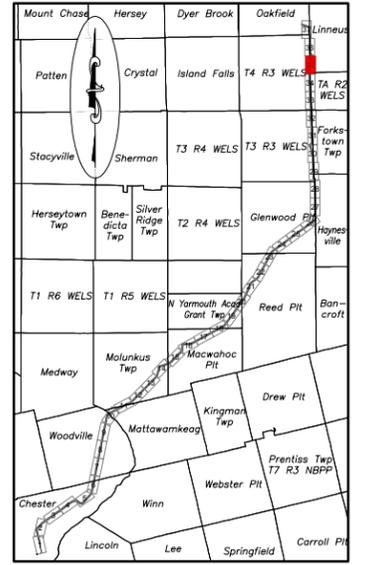
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**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine

Figure No. **34**

Title  
**Delineated Natural Resource Map**

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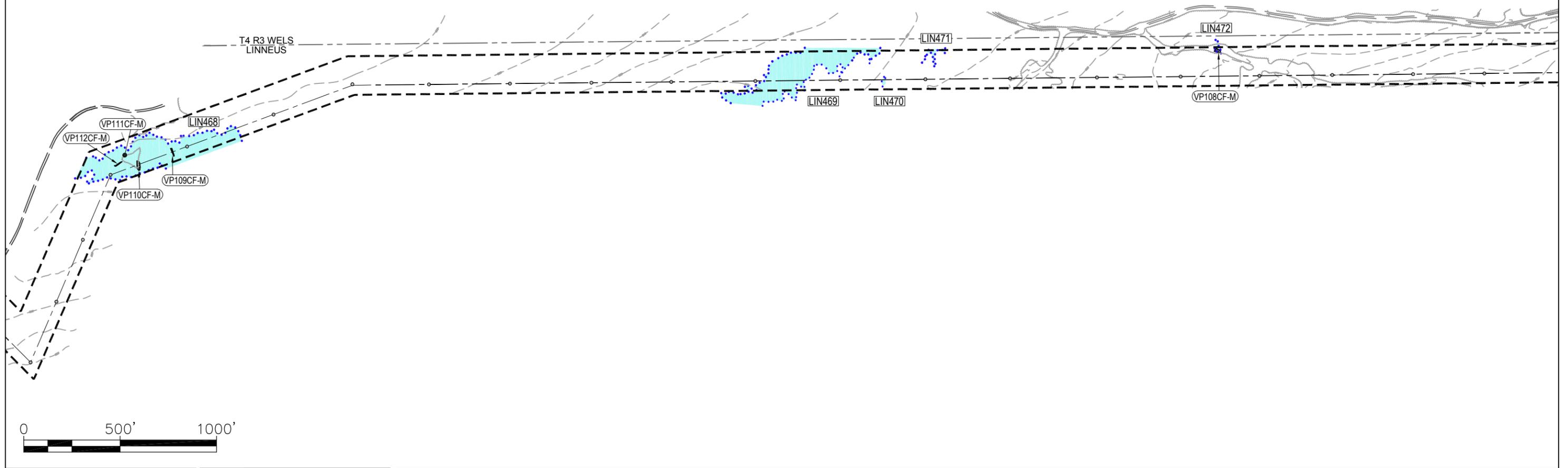
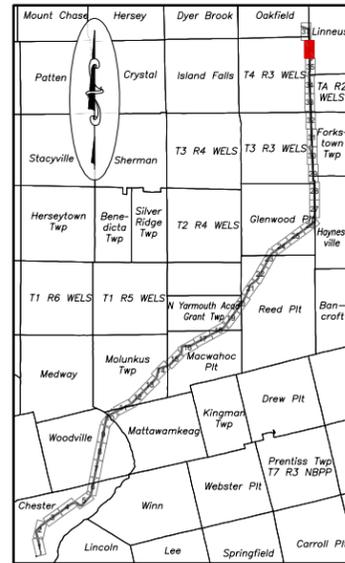


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	Proposed transmission line structure		Resource identification
	Proposed transmission corridor and centerline		Natural vernal pool identification
	Stream identified by Stantec		Man-made vernal pool identification
	Wetland identified by Stantec		Significant vernal pool identification
	Vernal pool identified by Stantec		
	Significant vernal pool identified by Stantec		

- Notes**
1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
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  4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**35**  
 Title  
**Delineated Natural Resource Map**



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**Legend**

- Proposed transmission line structure
- Proposed transmission corridor and centerline
- Stream identified by Stantec
- Wetland identified by Stantec
- ▨ Vernal pool identified by Stantec
- ▩ Significant vernal pool identified by Stantec

- ☐ CHE001 Resource identification
- VP01MA-N Natural vernal pool identification
- VP01MA-M Man-made vernal pool identification
- SVP01DD-N Significant vernal pool identification

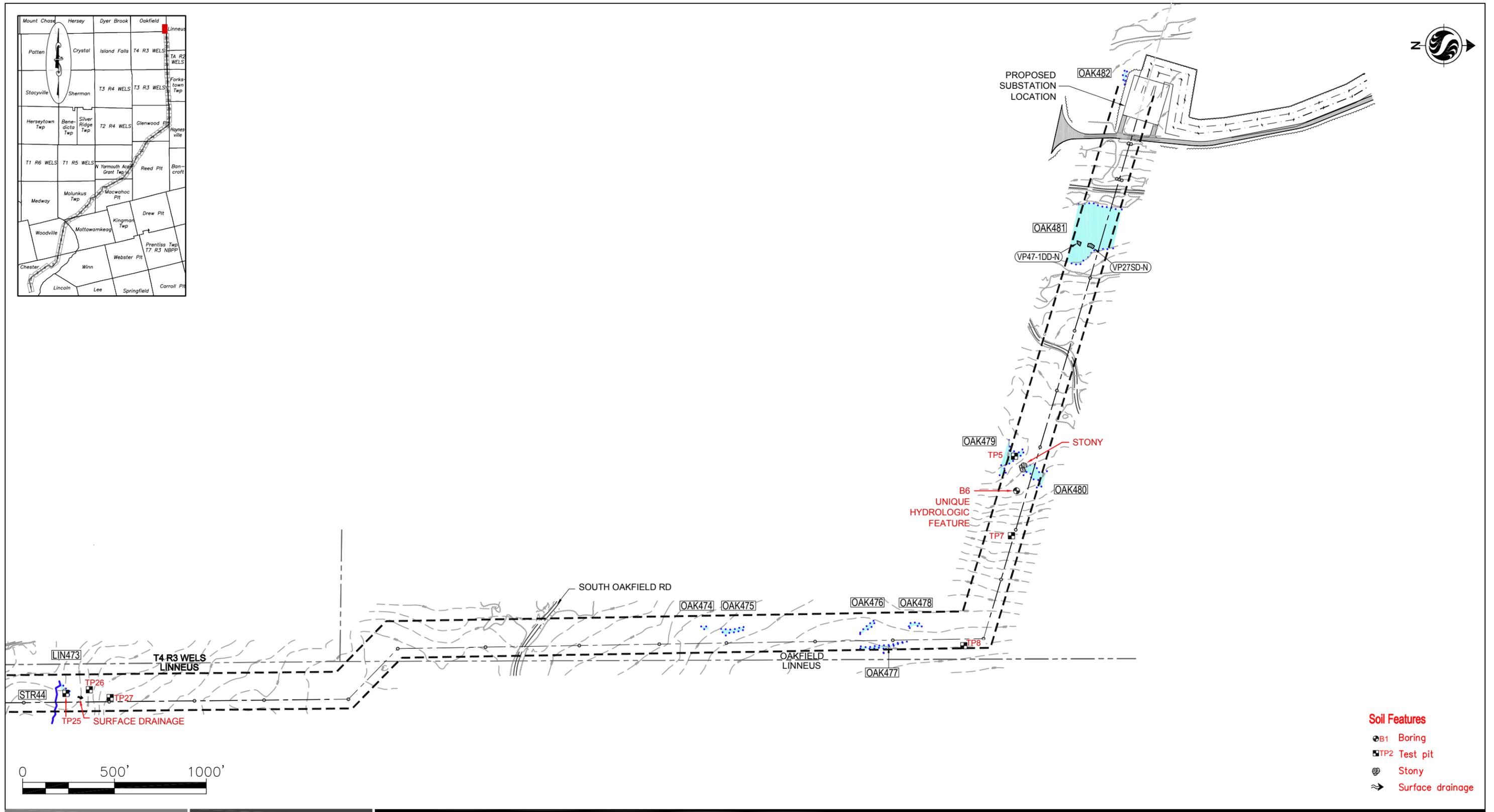
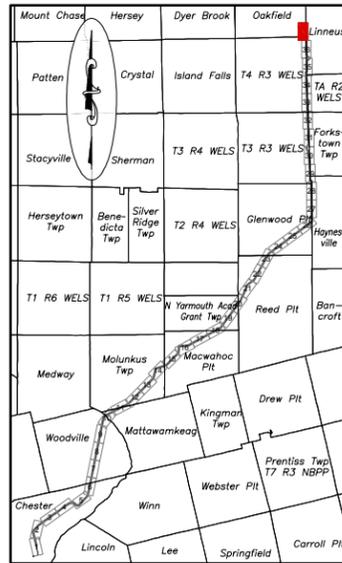
**Notes**

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4. Transmission line design provided by TRC.

Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**36**  
 Title  
**Delineated Natural Resource Map**

195600518

May 2011



- Soil Features**
- B1 Boring
  - TP2 Test pit
  - Stony
  - Surface drainage

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 Fax. 207.729.2715  
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- Legend**
- Proposed transmission line structure
  - Proposed transmission corridor and centerline
  - Stream identified by Stantec
  - Wetland identified by Stantec
  - Vernal pool identified by Stantec
  - Significant vernal pool identified by Stantec

- CHE001** Resource identification
- VP01MA-N** Natural vernal pool identification
- VP01MA-M** Man-made vernal pool identification
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- Notes**
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Client/Project  
**Maine GenLead, LLC**  
 Maine GenLead 115kV Transmission Line  
 Oakfield, Maine  
 Figure No.  
**37**  
 Title  
**Delineated Natural Resource Map**

## **Appendix A Additional Wetlands Data**

**Table A-1. Wetland Resource Table**

Wetland ID	Numbered Order	Resource Map #	Wetland Classification <sup>1</sup>				Stream <sup>2</sup>	Vernal Pool <sup>3</sup>	WSS <sup>4</sup>	Wetland Information			Notes
			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	1	1		D			SVP07T T_N	H	gray birch, quaking poplar, white meadowsweet, pussy willow, common woosedge, fowl manna grass, Canada reed grass, sensitive fern, cinnamon fern	10" O horizon over 8-10" mucky A horizon, over depleted B horizon w/5% redox. concentrations	Areas of inundation, water stained leaves	Significant Vernal Pool	
Che	2	1		D			VP11MJ _M		white meadowsweet, red maple, cinnamon fern, evergreen wood fern, fringed sedge	16"+ dark A horizon over rock	Soil saturated to the surface, water stained leaves, areas of inundation		
Che	3	1			D		L56VP2_ M		rattlesnake manna grass, common woosedge, fringed sedge	6" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves, areas of inundation		
Che	6	1	D						balsam fir, quaking poplar, red maple, yellow birch, northern white-cedar, cinnamon fern, Canada dwarf-dogwood, evergreen wood fern	3" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Che	7	1	D		x		VP17CF _M	P	common winterberry, gray birch, American larch cinnamon fern, tussock cottonsedge, Labrador tea, rhodora, black huckleberry, three-seeded sedge, slender spikesedge, small cranberry	More than 30" organic soil, histosol	Free water at surface, soil saturated to the surface	Keene Bog	

<sup>1</sup> Cowardin, et al.; D = Dominant, X = present; \* Indicates the dominant wetland type prior to recent clearing activity

<sup>2</sup> Please refer to the stream table for specific stream information

<sup>3</sup> Vernal Pool Status: VP = Vernal Pool, SVP = Significant Vernal Pool, PVP = Potential Vernal Pool

<sup>4</sup> Wetlands of Special Significance

S = Critically imperiled (S1) or imperiled (S2) community

G = Within 250' of a GPA great pond

F = Wetland subject to flooding

H = Significant Wildlife Habitat

E = >20,000 s.f. of emergent vegetation or open water

P = Peatlands

C = Within 250' of a coastal wetland

R = Within 25' of river, stream or brook

Wetland ID	Numbered Order	Resource Map #	Wetland Classification <sup>1</sup>				Stream <sup>2</sup>	Vernal Pool <sup>3</sup>	WSS <sup>4</sup>	Wetland Information			Notes
			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	11	2	D		x		VP02MA_M, VP36DD_M, VP35DD_M, VP08MA_M		balsam fir, black spruce, red spruce, northern white-cedar, cinnamon fern, rattlesnake manna grass, rhodora, common woolsedge	Deep O horizon over depleted matrix over rock	Soil saturated to the surface, areas of inundation		
Che	12	2		D			VP03MA_M		All vegetation cleared with recent harvest, red maple stumps remain	3-4" dark A horizon over a depleted matrix with 10% redox. concentrations	Standing water in ruts		
Che	13	2	D				VP04.2MA_M, VP03MA_M		American larch, red spruce, gray birch, balsam fir, northern white-cedar, common woolsedge, white meadowsweet, common soft rush, sheep American-laurel	3-4" O horizon over depleted matrix	Soil saturated to the surface		
Che	14	2	D		x				northern white-cedar, balsam fir, cinnamon fern, common woolsedge, rattlesnake manna grass, broad-leaved cat-tail	2" dark A horizon over depleted matrix	Soil saturated to the surface, areas of inundation		
Che	15	2	D						red maple, balsam fir, northern white-cedar, black ash, cinnamon fern, fowl manna grass, sensitive fern, common wrinkle-leaved goldenrod, northern water-horehound	2" dark A horizon over depleted matrix	Soil saturated to the surface, areas of inundation		
Che	16	2	D				VP01MA_M, VP37DD_M		red maple, balsam fir, northern white-cedar, yellow birch, speckled alder, sensitive fern, cinnamon fern, fowl manna grass; balsam fir, dwarf raspberry, greater bladder sedge	Thin A horizon over depleted matrix with redox. concentrations	Areas of inundation; Soil saturated to the surface, water stained leaves		

<sup>1</sup> Cowardin, et al.; D = Dominant, X = present; \* Indicates the dominant wetland type prior to recent clearing activity

<sup>2</sup> Please refer to the stream table for specific stream information

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Wetland ID	Numbered Order	Resource Map #	Wetland Classification <sup>1</sup>				Stream <sup>2</sup>	Vernal Pool <sup>3</sup>	WSS <sup>4</sup>	Wetland Information			Notes
			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	17	2	D*	D*					red maple, balsam fir, speckled alder, greater bladder sedge, fowl manna grass	Depleted matrix with redox. features	Water stained leaves, areas of inundation		
Che	18	2	D*						red maple, balsam fir, speckled alder, fowl manna grass, Canada bluejoint, sensitive fern, royal fern	Depleted soil matrix	Areas of inundation		
Che	19	2		D*			STR01	R	speckled alder, Canada reed grass, sensitive fern, fringed sedge	6" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, areas of inundation, water stained leaves		
Che	20	2	D*	D*	D		STR01	R, H	northern white-cedar, balsam fir, yellow birch, speckled alder, white meadowsweet, Canada bluejoint, goldthread, sensitive fern	Mucky A horizon over a B horizon with a depleted matrix	Wetland drainage patterns, soil saturated to the surface	Mapped IWWH	
Che	21	2	D*					H	balsam fir, gray birch, northern white-cedar, red maple, cinnamon fern, sensitive fern, speckled alder, witherod	Depleted soil matrix with redox. features, some areas with a histic epipedon	Areas of inundation, elevated roots, wetland drainage patterns	Mapped IWWH	
Che	22	2		D	D	D	STR02, STR01, STR03	H, R	red maple, speckled alder, yellow birch, white meadowsweet, black ash, green ash, cinnamon fern, sensitive fern, fowl manna grass; common wooldsedge, Canada reed grass, bullhead pond-lily	Mostly disturbed floodplain soils, some areas 6-12" dark A horizon over depleted B horizon with redox. concentrations ; Alluvial soils, frequently flooded	Water stained leaves, wetland drainage patterns, stream; Areas of inundation	Mapped IWWH. Medunkeunk Stream.	

<sup>1</sup> Cowardin, et al.; D = Dominant, X = present; \* Indicates the dominant wetland type prior to recent clearing activity

<sup>2</sup> Please refer to the stream table for specific stream information

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Wetland ID	Numbered Order	Resource Map #	Wetland Classification <sup>1</sup>				Stream <sup>2</sup>	Vernal Pool <sup>3</sup>	WSS <sup>4</sup>	Wetland Information			Notes
			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	23	2	D					STR02	R, H	red maple, speckled alder, lake-side sedge, tall white-aster, sensitive fern, Canada reed grass	6" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves	Mapped IWWH
Che	24	2	D				VP06TT_N		H	balsam fir, red maple, quaking poplar, northern white-cedar, witherod, speckled alder, cinnamon fern, sensitive fern, fowl manna grass	3-5" O horizon over 3-6" A horizon over depleted B horizon with 5% redox. concentrations	Soil saturated to the surface, water stained leaves	Mapped IWWH
Che	25	2	D						H	balsam fir, red maple, quaking poplar, northern white-cedar, gray birch, witherod, speckled alder, cinnamon fern, sensitive fern, fowl manna grass	3-5" O horizon over 3-6" A horizon over depleted B horizon with 5% redox. concentrations	Soil saturated to the surface, water stained leaves	Mapped IWWH
Che	26	2	D							balsam fir, red maple, quaking poplar, northern white-cedar, gray birch, witherod, speckled alder, cinnamon fern, sensitive fern, fowl manna grass	3-5" O horizon over 3-6" A horizon over depleted B horizon with 5% redox. concentrations	Soil saturated to the surface, water stained leaves	
Che	27	2	D						H	balsam fir, red maple, speckled alder, witherod, cinnamon fern, Canada reed grass, fowl manna grass, evergreen wood fern	4" O horizon over 1" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves, areas of inundation	Mapped IWWH
Che	28	2	D				L56VP4_M, L56VP5_M			balsam fir, red maple, quaking poplar, northern white-cedar, gray birch, witherod, speckled alder, cinnamon fern, sensitive fern, fowl manna grass	3-5" O horizon over 3-6" A horizon over depleted B horizon with 5% redox. concentrations	Soil saturated to the surface, water stained leaves	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	29	2	D						balsam fir, red maple, quaking poplar, northern white-cedar, gray birch, witherod, speckled alder, cinnamon fern, sensitive fern, fowl manna grass	3-5" O horizon over 3-6" A horizon over depleted B horizon with 5% redox. concentrations	Soil saturated to the surface, water stained leaves		
Che	30	2	D						balsam fir, red maple, speckled alder, witherod, cinnamon fern, Canada reed grass, fowl manna grass, evergreen wood fern	4" O horizon over 1" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves, areas of inundation		
Che	31	3	D				L56VP6_M		balsam fir, gray birch, red maple, quaking poplar, speckled alder, fringed sedge, sensitive fern, Canada reed grass, cinnamon fern	4" O horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves		
Che	32	3	D*	D*					speckled alder, red maple, sheep American-laurel, American larch, balsam fir, gray birch, cinnamon fern	Depleted B horizon with redox. features	Standing water, water stained leaves, soil saturated to the surface		
Che	33	3	D				VP05TT_N		red maple, balsam fir, gray birch, common winterberry, witherod, sheep American-laurel, fowl manna grass, Canada reed grass, cinnamon fern	6-8" O horizon over depleted B horizon with 5-10% redox. concentrations	Areas of inundation, water stained leaves, soil saturated to the surface		
Che	34	3	D						red spruce, black spruce, northern white-cedar, balsam fir, common winterberry, speckled alder, rhodora, sheep American-laurel, cinnamon fern	20+" O horizon	Soil saturated to the surface, water stained leaves		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	35	3	D				VP39DD_M, VP10MJ_M, VP37DD_M		red spruce, northern white-cedar, balsam fir, common winterberry, speckled alder, rhodora, sheep American-laurel, cinnamon fern, fowl manna grass	20+" O horizon	Soil saturated to the surface, water stained leaves, wetland drainage patterns		
Che	36	3	D	D	x				red spruce, black spruce, northern white-cedar, balsam fir, common winterberry, speckled alder, rhodora, sheep American-laurel, cinnamon fern; gray birch, white meadowsweet, Canada reed grass, fowl manna grass, three-seeded sedge, sensitive fern, witherod, red maple, American larch	Histosol; areas of depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves, free water at 1" below the surface, areas of inundation		
Che	37	3	D	D					balsam fir, red maple, gray birch, witherod, cinnamon fern, sensitive fern, three-seeded sedge; red spruce, speckled alder, common winterberry, fowl manna grass, broad-leaved cat-tail, common wooldsedge	6" O horizon over depleted B horizon with 25% redox. concentrations ; 36"+ O horizon, histosol	Soil saturated to the surface, water stained leaves		
Che	38	3	D						balsam fir, red maple, speckled alder, witherod, Canada reed grass, sensitive fern, three-seeded sedge	3-4" O horizon over 2-3" A horizon over depleted B horizon with 10% redox. concentrations	Soil saturated within 12" of surface, water stained leaves		
Che	39	3	D	D					balsam fir, gray birch, red maple, quaking poplar, speckled alder, fringed sedge, sensitive fern, Canada reed grass, cinnamon fern	4" O horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves		

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Che	40	3	D						balsam fir, quaking poplar, red maple, speckled alder, cinnamon fern, sensitive fern, fowl manna grass	6" A horizon over depleted B Horizon with 15% redox. concentrations	Soil saturated to the surface, water stained leaves, free water at 2" below the surface		
Che	41	3	D						balsam fir, gray birch, red maple, quaking poplar, speckled alder, fringed sedge, sensitive fern, Canada reed grass, cinnamon fern	4" O horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves		
Che	42	3	D					H	balsam fir, gray birch, red maple, quaking poplar, speckled alder, fringed sedge, sensitive fern, Canada reed grass, cinnamon fern	4" O horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves	Mapped DWA	
Che	43	3	D				L56VP7_M	H	balsam fir, gray birch, red maple, common winterberry, white meadowsweet, three-seeded sedge, Canada reed grass, fowl manna grass, common soft rush	18-20" O horizon	Areas of inundation, water stained leaves	Mapped DWA	
Che	44	3	D					H	balsam fir, quaking poplar, red maple, nodding sedge, fowl manna grass, cinnamon fern, sensitive fern	1" O horizon over 4" A horizon over depleted B horizon with 10% redox. concentration	Soil saturated to the surface, water stained leaves, wetland drainage patterns	Mapped DWA	
Che	45	3	D					H	balsam fir, quaking poplar, red maple, nodding sedge, fowl manna grass, cinnamon fern, sensitive fern	1" O horizon over 4" A horizon over depleted B horizon with 10% redox. concentration	Soil saturated to the surface, water stained leaves, wetland drainage patterns	Mapped DWA	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	46	3	D					H	balsam fir, quaking poplar, red maple, nodding sedge, fowl manna grass, cinnamon fern, sensitive fern	1" O horizon over 4" A horizon over depleted B horizon with 10% redox. concentration	Soil saturated to the surface, water stained leaves	Mapped DWA	
Che	47	3		D*				H	balsam fir, gray birch, winterberry, cinnamon fern, goldthread	Depleted matrix within 7" of the soil surface	Areas of standing water, soil saturated to the surface	Mapped DWA	
Che	48	3	D					H	balsam fir, red spruce, northern white-cedar, red maple, speckled alder, cinnamon fern, sensitive fern, fowl manna grass	6-8" O horizon over depleted B horizon with 15% redox. concentrations	Water stained leaves, soil saturated within 12" of the surface	Mapped DWA	
Che	49	3	D					H	balsam fir, yellow birch, green ash, red maple, cinnamon fern	2-3" O horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface, wetland drainage patterns	Mapped DWA	
Che	50	3	D				VP15CF_N	H	red maple, northern white-cedar, speckled alder, white meadowsweet, cinnamon fern, common woosedge, Canada reed grass, rattlesnake manna grass	4-5" O horizon over depleted matrix with 20% redox. features	6-12" free standing water, soil saturated to the surface	Mapped DWA	
Che	51	3	D					H	balsam fir, red maple, black ash, northern white-cedar, yellow birch, gray birch, white meadowsweet, cinnamon fern, sensitive fern, common wrinkle-leaved goldenrod, Canada reed grass	3-6" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface	Mapped DWA	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	52	3	D					VP40DD_M	H	northern white-cedar, red maple, yellow birch, balsam fir, red spruce, eastern hemlock, cinnamon fern, Canada dwarf-dogwood, crested wood fern, evergreen wood fern, sensitive fern	4-6" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface	Mapped DWA
Che	53	4	D*	D*					H	red maple, gray birch, balsam fir, sensitive fern	Depleted matrix within 7" of the soil surface	Areas of standing water	Mapped DWA
Che	54	4	D*	D*					H	red maple, gray birch, balsam fir, sensitive fern	Depleted matrix within 7" of the soil surface	Areas of standing water	Mapped DWA
Che	55	4		D					H	gray birch, red maple, quaking aspen, yellow birch, long-beaked willow, sensitive fern, cinnamon fern, dwarf raspberry, fringed sedge	4" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, areas of free standing water at 5"	Mapped DWA
Che	56	4		D					H	gray birch, red maple, quaking aspen, yellow birch, long-beaked willow, sensitive fern, cinnamon fern, dwarf raspberry, fringed sedge	4" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, areas of free standing water at 5"	Mapped DWA
Che	57	4		D					H	eastern hemlock, quaking poplar, gray birch, balsam fir, common winterberry, cinnamon fern, sensitive fern, smooth goldenrod	1-3" dark A horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface	Mapped DWA

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	58	4	D						H, R	northern white-cedar, red maple, yellow birch, balsam fir, red spruce, eastern hemlock, cinnamon fern, Canada dwarf-dogwood, crested wood fern, evergreen wood fern, sensitive fern	4-6" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface	Mapped DWA.
Che	59	4	D*	D*			L56VP8_N, L56VPdd b_N		R	red maple, gray birch, balsam fir, sensitive fern	Depleted matrix within 7" of the soil surface	Areas of standing water	
Che	60	4	D							northern white-cedar, red maple, yellow birch, balsam fir, red spruce, eastern hemlock, cinnamon fern, Canada dwarf-dogwood, crested wood fern, evergreen wood fern, sensitive fern	4-6" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface	
Che	61	4		D*						red-osier dogwood, speckled alder, broad-leaved cat-tail, sensitive fern	No data	Areas of inundation	
Che	62	4	D						H	balsam fir, quaking poplar, yellow birch, speckled alder, common winterberry, cinnamon fern, crested wood fern, evergreen wood fern	4" dark A horizon over depleted matrix with 12% redox. features	Soil saturated to the surface	Mapped IWWH
Che	63	4	D	D					H	red maple, balsam fir, quaking poplar, yellow birch, speckled alder, common winterberry, cinnamon fern, crested wood fern, evergreen wood fern, white meadowsweet, dwarf raspberry	4" dark A horizon over depleted matrix with 10-12% redox. features	Soil saturated to the surface	Mapped IWWH

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology		
Che	64	4	x	D	D				STR05	E, R	northern white-cedar, balsam fir, yellow birch, quaking poplar, speckled alder, long-beaked willow, pussy willow, rattlesnake manna grass, broad-leaved cat-tail, Canada goldenrod	O horizon over depleted matrix with redox. features	Soil saturated to the surface	20,000 square feet of open water/emergent vegetation. Mapped IWWH
Che	65	4	D								balsam fir, red maple, red spruce, quaking poplar, Canada reed grass	12-15" sandy fill from road over depleted matrix with 3% redox. concentrations	Soil saturated to the surface	
Che	66	4	D*	D*							speckled alder, white meadowsweet, red maple, gray birch, quaking aspen	Depleted B horizon	Standing water, areas of inundation	
Che	67	4	D								red maple, gray birch, hoary sedge, Canada reed grass, cinnamon fern	2-4" dark A horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface, areas of inundation	
Che	68	4	D						STR06	H, R	northern white-cedar, red maple, yellow birch, red spruce, speckled alder, common winterberry, fowl manna grass, rattlesnake manna grass, Canada reed grass, balsam fir, white meadowsweet, sensitive fern, nodding sedge	8-16" O horizon over depleted matrix; 4-6" O horizon over depleted matrix with 25% redox. concentrations	Soil saturated to the surface, areas of inundation, wetland drainage patterns	Mapped IWWH. Ebhorse Stream
Che	69	4		D						H	balsam fir, quaking poplar, speckled alder, witherod, nodding sedge, meadowsweet, mad dog skullcap, purple-stemmed American-aster	6" of organic matter over a gleyed soil	soil saturated to surface, 10% of wetland inundated	Mapped IWWH

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	70	4	D	D				H	balsam fir, quaking poplar, speckled alder, nodding sedge, witherod, white meadowsweet, red spruce, gray birch, Canada reed grass, fowl manna grass, rattlesnake manna grass	6-8" O horizon over gleyed matrix	Soil saturated to the surface, areas of inundation	Mapped IWWH	
Che	71	5	x*	D*					balsam fir, red maple, gray birch, green ash, winterberry, pink meadowsweet, speckled alder, cinnamon fern, northern blue flag iris, sensitive fern	Depleted matrix within 7" of the soil surface	Standing water, soil saturated to the surface		
Che	72	5	D*						red maple, balsam fir, speckled alder, white meadowsweet, greater bladder sedge	Depleted matrix at 5" below soil surface	Water-stained leaves, soil saturated to the surface		
Che	73	5	D		x				balsam fir, gray birch, red maple, speckled alder, northern white-cedar, fowl manna grass, sensitive fern, cinnamon fern, Canada reed grass	Thin O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface		
Che	74	5	D						gray birch, balsam fir, witherod, Canada dwarf-dogwood, quaking poplar	Depleted matrix with redox. features	Soil saturated to the surface		
Che	75	5	D					VP01MG_M	balsam fir, yellow birch, speckled alder, common winterberry, long-beaked willow, white meadowsweet, flaccid manna grass, sensitive fern, three-seeded sedge, cinnamon fern	Depleted matrix with 5% redox. concentrations	Areas of inundation		
Che	76	5	D					VP11MA_M	yellow birch, balsam fir, red maple, cinnamon fern, rosy meadowsweet	Thin O horizon over depleted matrix with redox. concentrations	Areas of inundation		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	77	5			D				fowl manna grass, sensitive fern	Depleted matrix with redox. concentrations	Soil saturated to the surface		
Che	78	5		D*					speckled alder, red maple, pink meadowsweet, sensitive fern, cinnamon fern, common soft rush	Depleted matrix within 7" of the soil surface	Areas of standing water		
Che	79	5	D	x	x			H	balsam fir, speckled alder, gray birch, Canada reed grass, fowl manna grass, dwarf raspberry, evergreen wood fern, sensitive fern	Depleted matrix just below surface with redox. concentrations	Soil saturated to the surface	Mapped IWWH	
Che	80	5		D				H	balsam fir, pussy willow, eastern rough sedge, dwarf raspberry, rosy meadowsweet, evergreen wood fern	2" dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation, wetland drainage patterns	Mapped IWWH	
Che	81	5	D	D			VP10MA_N	H	northern white-cedar, balsam fir, speckled alder, white meadowsweet, Canada reed grass, tall white-aster, common woolsedge, sensitive fern, sheep American-laurel, dwarf raspberry, pussy willow,	Gleyed matrix 5" below the soil surface; 15" O/A horizon over depleted matrix with redox. features	Soil saturated to the surface, wetland drainage patterns	Mapped IWWH	
Che	82	5		D					no data	no data	no data		
Che	83	5	D						yellow birch, red maple, common winterberry, balsam fir, northern white-cedar, fowl manna grass, cinnamon fern	Depleted matrix with redox. concentrations	Soil saturated to the surface		
CHE483	83	5			D*				common woolsedge, fowl manna grass, American larch, red maple, white meadowsweet	2" dark A horizon over a depleted matrix	Soil saturated at 2"		

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Che	84	5	D						northern white-cedar, balsam fir, red spruce, witherod, common winterberry, cinnamon fern, tussock sedge, Canada reed grass, three-seeded sedge, wood horsetail	2" dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, water stained leaves		
Che	85	5	D		x				American larch, red spruce, northern white-cedar, red maple, sheep American-laurel, Canada reed grass, common soft rush	2" dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, water stained leaves		
Che	86	5	D						red maple, paper birch, hop-hornbeam, sensitive fern, unidentifiable grass	no data	Water stained leaves, areas of inundation, soil saturated to the surface		
Che	87	5	D						gray birch, balsam fir, long-beaked willow, common winterberry, evergreen wood fern, sensitive fern, fowl manna grass, dwarf raspberry	2" dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, water stained leaves		
Che	88	5	D						northern white-cedar, balsam fir, yellow birch, red spruce, sensitive fern, evergreen wood fern, billing's sedge	6" dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Che	89	5			D				rosy meadowsweet, Canada reed grass	1" dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	90	5	D						northern white-cedar, eastern hemlock, balsam fir, gray birch, mountain holly, common winterberry, red maple, crested wood fern, cinnamon fern, three-seeded sedge	2-3" dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, water stained leaves		
Che	91	5	D						red maple, gray birch, eastern hemlock, northern white-cedar, three-seeded sedge, evergreen wood fern	O horizon over depleted matrix with redox. features	Water stained leaves		
Che	92	5	D					H	northern white-cedar, balsam fir, red spruce, cinnamon fern, sensitive fern, three-seeded sedge	O horizon over depleted matrix with redox. features	Soil saturated to the surface	Mapped IWWH	
Che	93	5	D					H	northern white-cedar, balsam fir, quaking poplar, balsam fir, yellow birch, greater bladder sedge, Canada dwarf-dogwood	Depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation	Mapped IWWH	
Che	94	6		D				VP01MA_M	speckled alder, royal fern, sensitive fern	Disturbed alluvial soils over depleted matrix		Mapped IWWH.	
Che	95	6	D					H	northern white-cedar, yellow birch, gray birch, long-beaked willow, red spruce, three-seeded sedge	16+" O horizon	Soil saturated to the surface, areas of inundation	Mapped IWWH	
Che	96	6	D					H	black spruce, American larch, witherod, rhodora, sheep American-laurel, tussock sedge	Deep O horizon over gleyed matrix	Soil saturated to the surface, areas of inundation	Mapped IWWH	
Che	97	6	D					H	black spruce, American larch, witherod, rhodora, sheep American-laurel, tussock sedge	Deep O horizon over gleyed matrix	Soil saturated to the surface, areas of inundation	Mapped IWWH	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Che	98	6	D						black spruce, American larch, witherod, rhodora, sheep American-laurel, tussock sedge	Deep O horizon over gleyed matrix	Soil saturated to the surface, areas of inundation		
Che	99	6			D				balsam fir, American larch, gray birch, speckled alder, broad-leaved cat-tail, Canada reed grass, tall white-aster, white meadowsweet	2" dark, mucky A horizon over depleted matrix with 15% redox. features	Areas of inundation		
Che	100	6	D						balsam fir, red maple, quaking aspen, white meadowsweet, three-seeded sedge, common woosedge, Canada dwarf-dogwood, greater bladder sedge	3-5" dark A horizon over depleted matrix with 15% redox. concentrations	soil saturated to the surface		
Che	101	6	D						red maple, quaking aspen, red spruce, white meadowsweet, greater bladder sedge, Canada reed grass, tall white-aster	4" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
Che	102	6		D					balsam fir, American larch, red spruce, witherod, three-seeded sedge, sheep American-laurel, greater bladder sedge, Canada reed grass	6" O horizon over depleted matrix with 10% redox. features	Soil saturated to the surface		
Woo	103	6	D	D	D		STR07	VP33ED_M, VP34ED_M	R	red maple, red spruce, American larch, northern white-cedar, black spruce, sheep American-laurel, speckled alder, cinnamon fern, nodding sedge, wooly-fruited sedge	4-8" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Woo	104	6	D						black spruce, red spruce, witherod, common winterberry, cinnamon fern, sheep American-laurel, rhodora	8-16" O horizon over depleted B horizon with redox. features	Soil saturated to the surface		
Woo	105	6	D						black spruce, red spruce, witherod, common winterberry, cinnamon fern, sheep American-laurel, rhodora	6" dark, mucky A horizon over depleted matrix with 7% redox. features	Soil saturated to the surface		
Woo	106	6	D						black spruce, red spruce, witherod, common winterberry, cinnamon fern, sheep American-laurel, rhodora	8-16" O horizon over depleted B horizon with redox. features	Soil saturated to the surface		
Woo	107	6		D					northern wild-raisin, bristly black currant, winterberry	no data	Soil saturated to the surface, water stained leaves		
Woo	108	6	D				VP20CF_N		northern white-cedar, red spruce, American larch, red maple, balsam fir, speckled alder, cinnamon fern, common woolsedge, sensitive fern	16"+ O horizon, histosol	Soil saturated to the surface		
Woo	109	7	D		D		VP35ED_M		red maple, red spruce, balsam fir, northern white-cedar, quaking poplar, red raspberry, fringed willow-herb, pointed broom sedge, creeping bentgrass, mosquito bulrush, common soft rush	8" O horizon over depleted matrix with 15% redox. concentrations , Disturbed A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, areas of inundation	wetland is disturbed	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Woo	110	7			D				pointed broom sedge, creeping bentgrass, fringed willow-herb, red raspberry, mosquito bulrush, common soft rush	Disturbed A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, areas of inundation	wetland is disturbed	
Woo	111	7			D		VP124C F_M, VP125C F_M, VP126C F_M		pointed broom sedge, creeping bentgrass, fringed willow-herb, red raspberry, mosquito bulrush, common soft rush	Disturbed A horizon over depleted matrix with 10% redoximorphic concentrations	Soil saturated to the surface, areas of inundation	wetland is disturbed	
Woo	112	7		D					gray birch, yellow birch, sensitive fern, Canada reed grass	2" dark A horizon over depleted matrix	Areas of inundation		
Woo	113	7		D					gray birch, American larch, sensitive fern, common wrinkle-leaved goldenrod, common wooldsedge, broad-leaved cat-tail, fringed willow-herb	Depleted matrix with 25% redoximorphic concentrations	Soil saturated to the surface		
Woo	114	7	D						no data	no data	no data		
Woo	115	7			D				sallow sedge, rattlesnake manna grass, dwarf raspberry, sensitive fern, water avens	6" dark A horizon over a depleted B horizon with 10% redox. concentrations at 10"	Soil saturated		
Woo	116	7	D						balsam poplar, gray birch, sensitive fern, white meadowsweet, fowl manna grass	6" Ap horizon over a depleted B horizon with less than 5% redox. concentrations at 8", soil previously disturbed	Soil saturated, free water at 1" below soil surface, some pits with standing water	along roadside, previously disturbed	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Woo	117	7	D						balsam fir, yellow birch, red maple, Canada reed grass, cinnamon fern, sensitive fern	6" dark Ap/O horizon over a depleted matrix with 5% redox. concentrations	Soil saturated, standing water present in pits		
Woo	118	7	D						balsam fir, yellow birch, red maple, Canada reed grass, cinnamon fern, sensitive fern	6" dark Ap/O horizon over a depleted matrix with 5% redox. concentrations	Soil saturated, standing water present in pits		
Woo	119	7	D						yellow birch, black ash, balsam fir, eastern hemlock, sensitive fern, fowl manna grass	6" dark Ap/O horizon over a depleted matrix with 5% redox. concentrations	Soil saturated, all pits with standing water		
Woo	120	7	D						balsam fir, red maple, yellow birch, sensitive fern, fowl manna grass	5" organic over a depleted sandy loam with 5% redox. concentrations	Soil saturated to the surface, free water at less than 1" below soil surface, all pits with standing water		
Woo	121	7	D						red maple, yellow birch, Canada reed grass, sensitive fern, water avens, balsam poplar	6" dark Ap/O horizon over a depleted matrix with 5% redox. concentrations	Soil saturated, standing water present in pits	old woods road	
Woo	122	7			D				sensitive fern, crested wood fern, fowl manna grass	6" dark Ap/O horizon over a depleted matrix with 5% redox. concentrations	Soil saturated to the surface, water stained leaves	old woods road	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Woo	123	7	x	D	D		VP36ED_M, VP37ED_M, VP38ED_M, VP39ED_M, VP40ED_M	H	balsam fir, northern white-cedar, yellow birch, red raspberry, common woolsedge, fowl manna grass, sensitive fern, necklace sedge	Depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation	Mapped DWA	
Woo	124	7			D			H	long-beaked willow, pussy willow, red maple, red raspberry, green ash, Canada reed grass, fowl manna grass	16" very dark A horizon over depleted B horizon with redox. concentration	Areas of inundation	Mapped DWA	
Woo	125	7	D					H	yellow birch, cinnamon fern, sensitive fern, fowl manna grass	Dark A horizon over depleted matrix with redox. features	Soil saturated to the surface	Mapped DWA	
Woo	126	7	D				VP41ED_M, VP42ED_M	H	yellow birch, balsam fir, northern white-cedar, red raspberry, fowl manna grass, common woolsedge, common wrinkled-leaved goldenrod	Dark A horizon over depleted matrix with redox. features	Soil saturated to the surface, areas of inundation	Mapped DWA	
Woo	127	8			D			H	no data	no data	no data	Mapped DWA	
Woo	128	8		D	x		VP43ED_M		northern white-cedar, balsam fir, red spruce, red maple, gray birch, sensitive fern, evergreen wood fern, fowl manna grass, common wrinkle-leaved goldenrod	Very dark A horizon over depleted matrix with redox. concentrations	Areas of inundation		
Woo	129	8		D	x				gray birch, red spruce, northern white-cedar, white meadowsweet, sensitive fern, cinnamon fern	4-6" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Woo	130	8	D	D					balsam fir, red maple, yellow birch, sensitive fern, fowl manna grass, common woolsedge	3" A horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, areas of inundation		
Woo	131	8			D			H	calico American-aster, common woolsedge, nodding sedge, yellow birch, red raspberry	6" mucky O horizon over depleted matrix	Areas of inundation	Mapped DWA	
Woo	132	8			D			H	calico American-aster, fowl manna grass, balsam fir, yellow birch	6" O horizon over 2" A horizon over depleted matrix	Soil saturated to the surface	Mapped DWA	
Woo	133	8	D	D				H	balsam fir, red maple, northern white cedar, gray birch, common woolsedge, cinnamon fern, nodding sedge, fowl manna grass	3" dark A horizon over depleted matrix	Soil saturated to the surface	Mapped DWA	
Woo	134	8		D				H	gray birch, pussy willow, common woolsedge, fowl manna grass, rosy meadowsweet	Mucky, dark A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, areas of inundation	Mapped DWA	
Woo	135	8	D	D	x			H	yellow birch, northern white-cedar, red maple, red spruce, pussy willow, gray birch, common woolsedge, rosy meadowsweet, broad-leaved cat-tail	6" dark A horizon over depleted matrix with redox. concentrations	Free water at soil surface	Mapped DWA	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Woo	136	8		D				VP07MA_M	H	gray birch, northern white-cedar, balsam fir, red spruce, sensitive fern, common woosedge, Canada dwarf-dogwood, crested wood fern; American larch, rosy meadowsweet, speckled alder, common winterberry, fowl manna grass, sheep American-laurel	6" dark A horizon over depleted matrix; 16+" O horizon	Soil saturated to the surface, areas of inundation	Mapped IWWH and DWA
Woo	137	9		D					H	balsam fir, gray birch, common woosedge, three-seeded sedge, Canada dwarf-dogwood, red raspberry	2" dark A horizon over depleted matrix	Soil saturated to the surface	Mapped DWA
Woo	138	9		D					H	northern white-cedar, gray birch, eastern white-pine, American larch, speckled alder, cinnamon fern, common woosedge, common soft rush, white meadowsweet	10" O horizon over depleted matrix with depletions	Soil saturated to the surface, some areas of inundation, free standing water at 2" in other areas	Mapped DWA
Woo	139	9		D			STR08		H, R	yellow birch, speckled alder, New York fern, greater bladder sedge, red raspberry, royal fern	4-6" O horizon over depleted matrix, low chroma sand	Soil saturated to surface, drainage patterns observed	Mapped DWA. Eagle Stream.
Woo	140	9		D					H	red spruce, white spruce, northern white-cedar, cinnamon fern, sensitive fern, three-seeded sedge	4-6" organic over depleted matrix with 10% redox. concentrations	Soil saturated to the surface	Mapped DWA

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Woo	141	9	D	D				R, H	northern white-cedar, red spruce, gray birch	16"+ O horizon, histosol	Soil saturated to the surface, areas of inundation	Mapped DWA.	
Woo	142	9		D				H	northern white-cedar, red spruce*, rosy meadowsweet, three-seeded sedge, common soft rush, dwarf raspberry, necklace sedge	Thick dark A horizon over a depleted matrix with redox. concentrations	Areas of inundation, soil saturated to the surface	Mapped DWA	
Woo	143	9		D				H	red spruce, black spruce, toothed white-topped-aster, fringed sedge, wood horsetail, sensitive fern	4-6" dark A horizon over depleted matrix with 10% redox. features	Soil saturated to the surface	Mapped DWA	
Woo	144	9		D					balsam fir, red spruce, red maple, common soft rush, sensitive fern, Canada dwarf-dogwood, common snowberry, greater bladder sedge,	4-6" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
Woo	145	9		D					northern white-cedar, red spruce*, rosy meadowsweet, three-seeded sedge, common soft rush, dwarf raspberry, necklace sedge	Thick dark A horizon over a depleted matrix with redox. concentrations	Areas of inundation, soil saturated to the surface		
Woo	146	9	D						balsam fir, red spruce, three-seeded sedge, fowl manna grass	4" dark mucky A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		

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Woo	147	10	D						northern white cedar, eastern hemlock, red maple, red raspberry, fringed sedge, crested wood fern, common wrinkle-leaved goldenrod	4-6" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, free standing water at 4"		
Woo	148	10	D						northern white-cedar, balsam fir, gray birch, red maple, yellow birch, three-seeded sedge, Canada dwarf-dogwood, cinnamon fern, common wrinkle-leaved goldenrod	4-6" dark A horizon over depleted matrix and areas of rock.	Soil saturated to the surface, free standing water at 6"		
Woo	149	10	D						northern white-cedar, balsam fir, gray birch, red maple, yellow birch, three-seeded sedge, Canada dwarf-dogwood, fringed sedge	4" dark A horizon over depleted matrix	Soil saturated to the surface, free standing water at 6"		
Woo	150	10	D						northern white-cedar, eastern hemlock, yellow birch, quaking poplar, long-beaked willow, three-seeded sedge, interrupted fern	Dark, mucky A horizon over depleted matrix with redox. concentrations and depletions	Soil saturated to the surface		
Woo	151	10	D						northern white-cedar, eastern hemlock, yellow birch, quaking poplar, long-beaked willow, three-seeded sedge, interrupted fern	Dark, mucky A horizon over depleted matrix with redox. concentrations and depletions	Soil saturated to the surface		

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Wetland ID	Numbered Order	Resource Map #	Wetland Classification <sup>1</sup>				Stream <sup>2</sup>	Vernal Pool <sup>3</sup>	WSS <sup>4</sup>	Wetland Information			Notes
			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Woo	152	10	D						red spruce, northern white-cedar, red maple, gray birch, eastern hemlock, balsam fir, three-seeded sedge, nodding sedge, cinnamon fern, sensitive fern, greater bladder sedge, crested wood fern, Canada dwarf-dogwood	4-6" O horizon over depleted matrix with 10% redox. concentrations ; 4" gravel over 6-12" O horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, some small areas of inundation; Soil saturated to the surface, free water at 8"		
Woo	153	10		D			STR10	R	American elm, red maple, speckled alder, Canada reed grass, white meadowsweet, sensitive fern, fowl manna grass, greater bladder sedge, royal fern	Areas of cobble over sand, frequently flooded / ponded	Areas of scouring, some surface water seepage. Drift line observed	Penobscot River	
Mat	154	10	D						balsam fir, quaking poplar, yellow birch, speckled alder, sensitive fern, interrupted fern, cinnamon fern, woodland horsetail	5-8" organic material and dark A horizon over a depleted matrix	Soil saturated to the surface		
Mat	155	10	D					VP26ED_N, VP27ED_N	red maple, red spruce, white meadowsweet, speckled alder, common wooldsedge	Dark A horizon over depleted matrix with 10-15% redox. concentrations	Soil saturated to the surface, areas of inundation		
Mat	156	10	D				STR11	R	northern white-cedar, cinnamon fern, common wooldsedge, northeastern manna grass, fowl manna grass, sensitive fern, crested wood fern, white meadowsweet, fringed willow-herb	18+" O horizon	Soil saturated to the surface, areas of inundation, wetland drainage patterns		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mat	157	10	D						northern white-cedar, red maple, red spruce, eastern hemlock, black ash, cinnamon fern, sensitive fern, dwarf raspberry, greater bladder sedge	8-16" O horizon over depleted matrix with redox. features	Soil saturated to the surface, wetland drainage patterns		
Mat	158	10	D				STR12	H, R	northern white-cedar, red maple, balsam fir, red raspberry, evergreen wood fern, greater bladder sedge, cinnamon fern	8-10" O horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface	Mapped DWA.	
Mat	159	10		D			STR12	R, H	balsam fir, yellow birch, red maple, eastern rough sedge, greater bladder sedge, crested wood fern, Canada goldenrod	6-8" dark A horizon over depleted matrix with 5-10% redox. concentrations	Soil saturated to the surface	Mapped DWA.	
Mat	160	11	D					H	northern white-cedar, eastern hemlock, red spruce, balsam fir, red raspberry, greater bladder sedge, fringed willow-herb, crested wood fern	6-16" O horizon over rock and over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, wetland drainage patterns	Mapped DWA	
Mat	161	11	D						red spruce, eastern hemlock, red maple, balsam fir, cinnamon fern, three-seeded sedge	4-8" O horizon over depleted matrix with 15% redox. concentrations , with some areas of rock	Some small pools of standing water, soil saturated to the surface		
Mat	162	11			D				yellow birch, eastern hemlock, red raspberry, northern water-horehound, cinnamon fern, sensitive fern	8" O horizon over depleted matrix with 5% redox. features	Soil saturated to the surface, wetland drainage patterns		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mat	163	11	D					H	balsam fir, eastern hemlock, yellow birch, green ash, red maple, northern white-cedar, speckled alder, cinnamon fern, evergreen wood fern, sensitive fern	6-8" O horizon over 6" A horizon over depleted B horizon	Soil saturated to the surface, wetland drainage patterns, water stained leaves	Mapped DWA	
Mat	164	11	D				STR13	H, R	northern white-cedar, eastern hemlock, green ash, yellow birch, balsam fir, cinnamon fern, fowl manna grass	Most areas disturbed O/A horizon over rocks, some areas with 3" O horizon over A horizon with redox. concentrations	Water stained leaves, wetland drainage patterns, frequently flooded	Mapped DWA. Mattaseunk Stream	
Mat	165	11	D				STR13	H, R	northern white-cedar, eastern hemlock, yellow birch, red maple, royal fern, fringed sedge	4" O horizon over 1" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves, areas of inundation	Mapped DWA. Mattaseunk Stream. Wyman Brook	
Mol	166	11	D				VP44DD_N	H	northern white-cedar, balsam fir, red maple, yellow birch, black ash, speckled alder, cinnamon fern, sheep American-laurel, sensitive fern, three-seeded sedge, broad-leaved cat-tail	16+" O horizon	Water stained leaves, soil saturated to the surface	Mapped DWA	
Mol	167	11	D						yellow birch, balsam fir, red maple, crested wood fern, nodding sedge, fringed willow-herb, New York fern, sensitive fern, cinnamon fern	Disturbed O/A horizon over rock	Soil saturated to the surface, wetland drainage patterns		
Mol	168	11	D						no data	no data	no data		

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Mol	169	11	D		x				balsam fir, red spruce, eastern hemlock, northern white-cedar, red maple, yellow birch, cinnamon fern, Canada reed grass, wood horsetail, nodding sedge	12" O horizon over rock	Soil saturated to the surface, water stained leaves, wetland drainage patterns		
Mol	170	11	D						balsam fir, northern white-cedar, gray birch, northeastern manna grass, Canada reed grass, evergreen wood fern, wood horsetail, fringed willow-herb	6" dark A horizon over depleted matrix with redox. features	Soil saturated to the surface, wetland drainage patterns, water stained leaves		
Mol	171	12	D						balsam fir, red maple, paper birch, green ash, northern white-cedar, cinnamon fern, common woosedge, greater bladder sedge	Disturbed layer over depleted matrix with redox. features	Soil saturated to surface, wetland drainage patterns		
Mol	172	12			D				sensitive fern, fringed willow-herb, Canada reed grass	5" dark A horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, areas of inundation, wetland drainage patterns		
Mol	173	12	D				STR14	R	black ash, green ash, paper birch, evergreen wood fern, red maple, dwarf raspberry, three-seeded sedge, cinnamon fern, greater bladder sedge, sensitive fern	Disturbed alluvial soils, sandy depleted matrix with redox. features	Soil saturated to the surface, areas of inundation		
Mol	174	12			D				sensitive fern, fringed willow-herb, Canada reed grass	5" dark A horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, areas of inundation, wetland drainage patterns		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology		
Mol	175	12	D		x				STR14	R	red maple, balsam fir, northern white-cedar, speckled alder, dwarf raspberry, evergreen wood fern, wood horsetail, common wrinkle-leaved goldenrod, black ash	4-6" dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation, wetland drainage patterns	
Mol	176	12	D		x				STR14	R	black ash, green ash, red spruce, red maple, cinnamon fern, sensitive fern, three-seeded sedge, nodding sedge, speckled alder, northern water-horehound	16+" O horizon	Soil saturated to the surface, areas of inundation	
Mol	177	12	D					VP25ED_M	STR14	R	black ash, green ash, red spruce, red maple, cinnamon fern, sensitive fern, three-seeded sedge, nodding sedge, speckled alder, northern water-horehound	16+" O horizon	Soil saturated to the surface, areas of inundation	22mj: defined channel, 2-3' wide, 8" deep, sand, cobble and rock substrate, aquatic moss observed, salamanders observed
Mol	178	12	D								northern white-cedar, eastern hemlock, yellow birch, balsam fir, gray birch, red maple, cinnamon fern, dwarf raspberry, Canada dwarf-dogwood	4" O horizon over 1" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves	
Mol	179	12	D		x						red spruce, balsam fir, yellow birch, cinnamon fern, evergreen wood fern, dwarf raspberry, nodding sedge, sensitive fern	6" dark A horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface	
Mol	180	12	D								black ash, green ash, red spruce, red maple, cinnamon fern, sensitive fern, three-seeded sedge, nodding sedge, speckled alder, northern water-horehound	8" dark A horizon over depleted B horizon with redox. concentrations	Areas of inundation, water stained leaves	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mol	181	12	D		D				northern white-cedar, red maple, yellow birch, balsam fir, speckled alder, sensitive fern, evergreen wood fern, northern water-horehound, dwarf raspberry, fringed willow-herb, common woolsedge, common wrinkle-leaved goldenrod	8-10" dark A horizon over depleted matrix with 20% redox. features	Soil saturated to the surface, wetland drainage patterns		
Mol	182	12	D		D				no data	no data	no data		
Mol	183	12			D				northern white-cedar, rattlesnake manna grass, tall white-aster, common grass-leaved goldenrod, common soft rush, nodding sedge	Disturbed area, 1-2" O horizon over depleted matrix with 3% redox. concentrations	Soil saturated to the surface		
Mol	184	12			D				tall white-aster, rattlesnake manna grass, sensitive fern, wood horsetail	2" O horizon over 2" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves		
Mol	185	12	D		x				northern white-cedar, red maple, yellow birch, balsam fir, speckled alder, sensitive fern, evergreen wood fern, northern water-horehound, dwarf raspberry, fringed willow-herb, common woolsedge, common wrinkle-leaved goldenrod	8-10" dark A horizon over depleted matrix with 20% redox. features	Soil saturated to the surface, wetland drainage patterns		
Mol	186	12	D						balsam fir, northern white-cedar, red maple, yellow birch, rattlesnake manna grass, fringed willow-herb, dwarf raspberry, evergreen wood fern, cinnamon fern	2" O horizon over 6" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mol	187	12	D		D		STR15	VP45DD_M	R	yellow birch, balsam fir, red maple, northern white-cedar, green ash, Canada reed grass, rattlesnake manna grass, dwarf raspberry, calico American-aster, sensitive fern	8-16" O horizon over depleted matrix with redox. features	Soil saturated to the surface, wetland drainage patterns	
Mol	188	12	D							red maple, yellow birch, balsam fir, speckled alder, rattlesnake manna grass, common woolsedge, cinnamon fern	2" O horizon over 1" A horizon over depleted B horizon with redox. concentrations	Areas of inundation	
Mol	189	12			D					rosy meadowsweet, rattlesnake manna grass, pointed broom sedge, common soft rush	6" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves	
Mol	190	12		D				VP46DD_N	H	northern white-cedar, red spruce, balsam fir, yellow birch, speckled alder, red raspberry, rosy meadowsweet, sensitive fern, cinnamon fern, fowl manna grass, common wrinkle-leaved goldenrod	Dark A horizon over depleted matrix with 5% redox. features, other areas of 16+" O horizon	Soil saturated to the surface	Mapped IWWH
Mol	191	13	D						H	northern white-cedar, red spruce, balsam fir, yellow birch, red raspberry, crested wood fern, evergreen wood fern, three-seeded sedge	8" very dark, mucky A horizon over depleted matrix with 15% redox. concentration	Soil saturated to the surface, water stained leaves	Mapped IWWH

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mol	192	13	D						northern white-cedar, red spruce, balsam fir, yellow birch, speckled alder, red raspberry, rosy meadowsweet, sensitive fern, cinnamon fern, fowl manna grass, common wrinkle-leaved goldenrod	Dark A horizon over depleted matrix with 5% redox. features	Soil saturated to the surface		
Mol	193	13	D						balsam fir, yellow birch, red spruce, pussy willow, evergreen wood fern, red maple, cinnamon fern sensitive fern	4-8" O horizon over rock	Soil saturated to the surface, water stained leaves		
Mol	194	13	D						balsam fir, yellow birch, red spruce, pussy willow, evergreen wood fern, red maple, cinnamon fern sensitive fern	4-8" O horizon over rock	Soil saturated to the surface, water stained leaves		
Mol	195	13			D				no data	no data	no data		
Mol	196	13	D						northern white-cedar, balsam fir, eastern hemlock, red maple, speckled alder, smooth white violet, mad dog skullcap, northern water-horehound, tall white-aster	8-16" O horizon over depleted matrix with redox. features	Soil saturated to the surface, wetland drainage patterns		
Mol	197	13			D				red maple, red raspberry, Virginian strawberry, evergreen wood fern, common wrinkle-leaved goldenrod, common grass-leaved goldenrod, sensitive fern	6" dark A horizon over depleted matrix with 7% redox. features	Soil saturated to the surface, wetland drainage patterns		
Mol	198	13	D				STR16, STR17	R	northern white-cedar, yellow birch, red maple, balsam fir, eastern hemlock, cinnamon fern, sensitive fern, evergreen wood fern, fringed sedge	18+" O horizon	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mol	199	14	D						yellow birch, northern white-cedar, balsam fir, water avens, sensitive fern, Pennsylvania bitter-cress, fowl manna grass	6" mucky organic over 14" dark A horizon with more than 10% redox. concentrations at 18" from surface	Soil saturated, wetland drainage patterns, water stained leaves		
Mol	200	14	D						eastern hemlock, northern white-cedar, yellow birch, gray birch, nodding sedge, sensitive fern, cinnamon fern, broad-leaved cat-tail, balsam fir	6" organic muck over a dark A horizon with more than 5% depletions and few oxidized rhizospheres	Soil saturated to the surface, wetland drainage patterns, elevated roots, trees with buttressed trunks		
Mol	201	14		D					yellow birch, balsam fir, red maple	4" organic over a mucky, dark A horizon with more than 10% redox. depletions and redox. concentrations within the depletions	Soil saturated to the surface, areas of standing water		
Mol	202	14			D				fowl manna grass, fringed sedge, common wooldsedge	Areas of gravelly loam with mucky organic material throughout, areas of a depleted fine sandy loam; soil disturbed	Wetland drainage patterns, soil saturated to the surface		

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Mol	203	14		D					R	yellow birch, red maple, green ash, water avens, sensitive fern	5" organic over a depleted matrix with 5% redox. concentrations and depletions	Wetland drainage patterns, elevated roots, soil saturated to the surface	Within 25' of stream, not directly connected to STR19
Mol	204	14		D						sensitive fern, cinnamon fern, yellow birch, fringed willow-herb, fowl manna grass	4" dark mucky A horizon over a depleted matrix with more than 5% redox. concentrations	Soil saturated, water stained leaves, some small areas of standing water	
Mol	205	14		D						yellow birch, balsam fir, black ash, long-beaked willow, cinnamon fern, sensitive fern	5" dark A horizon and O horizon, 3" depleted B horizon with 5% redox. concentrations	Soil saturated, areas of inundation, wetland drainage patterns	
Mol	206	14	D							balsam fir, northern white-cedar, yellow birch, cinnamon fern, golden-saxifrage, sensitive fern	6" organic over a depleted matrix with more than 5% redox. concentrations	Wetland drainage patterns, soil saturated, areas of standing water, elevated roots	
Mol	207	14	D							balsam fir, northern white-cedar, yellow birch, cinnamon fern, golden-saxifrage, sensitive fern	6" organic over a depleted matrix with more than 5% redox. concentrations	Wetland drainage patterns, soil saturated, areas of standing water, elevated roots	
Mol	208	14	D					VP47-2DD_M		balsam fir, northern white-cedar, yellow birch, hop-hornbeam, red maple, cinnamon fern, sensitive fern, fowl manna grass	10" organic over a depleted matrix with more than 5% redox. concentrations	Wetland drainage patterns, soil saturated to the surface, areas of standing water	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mol	209	14	D							balsam fir, yellow birch, long-beaked willow, northern white-cedar, common woolsedge, fringed willow-herb, sensitive fern	4" dark A horizon over a depleted matrix with redox. concentrations	Soil saturated, areas of inundation	
Mol	210	14		D						balsam fir, quaking poplar, gray birch, common soft rush, bladder sedge, sensitive fern, fowl manna grass	4" dark A horizon over a depleted matrix with 15% redox. concentrations	Soil saturated to the surface, free water at the surface	
Mol	211	14	D							quaking poplar, northern white-cedar, red maple, balsam fir, cinnamon fern, common wrinkle-leaved goldenrod, calico American-aster, northern water-horehound, fowl manna grass	8-16" O horizon over depleted matrix with redox. features	Soil saturated to the surface	
Mol	212	14	D				STR21	VP51DD_N	R	balsam fir, quaking poplar, yellow birch, red maple, speckled alder, northern white-cedar, cinnamon fern, sensitive fern, calico American-aster, narrow lady fern	3" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, wetland drainage patterns	
Mol	213	14			D					balsam fir, quaking poplar, fowl manna grass, sensitive fern, red raspberry, calico American-aster	4-6" very dark, mucky A horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, wetland drainage patterns	
Mol	214	14	D					VP50DD_M, VP49DD_M		eastern hemlock, red maple, yellow birch, balsam fir, speckled alder, cinnamon fern, sensitive fern, evergreen wood fern, crested wood fern, northern water-horehound	1-4" O horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mol	215	14	D				VP35CF_M, VP36CF_M		yellow birch, green ash, black ash, red maple, speckled alder, sensitive fern, evergreen wood fern	6-8" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Mol	216	14	D						eastern hemlock, balsam fir, yellow birch, long-beaked willow, black ash, sensitive fern, cinnamon fern, evergreen wood fern	4" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Mac	217	15	D						eastern hemlock, red maple, balsam fir, green ash, long-beaked willow, sensitive fern, cinnamon fern, fowl manna grass, wood horsetail	8" dark, mucky A horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface, water stained leaves		
Mac	218	15	D						eastern hemlock, red spruce, balsam fir, yellow birch, green ash, sensitive fern, cinnamon fern, narrow lady fern, evergreen wood fern, greater bladder sedge	8-16" O horizon over depleted matrix with redox. features	Soil saturated to the surface, wetland drainage patterns		
Mac	219	15	D						balsam fir, yellow birch, northern white-cedar, green ash, red maple, dwarf raspberry, evergreen wood fern, cinnamon fern, sensitive fern, fringed willow-herb	8" O horizon over 2" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves, wetland drainage patterns		
Mac	220	15	D		D				evergreen wood fern, nodding sedge, cinnamon fern, red raspberry, balsam fir, yellow birch, black ash	4" O horizon over depleted matrix	Soil saturated to the surface		
Mac	221	15	D						eastern hemlock, yellow birch, balsam fir, red maple, cinnamon fern, three-seeded sedge, sensitive fern, nodding sedge	Depleted matrix with redox. features	Areas of inundation		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mac	222	15			D				no data	no data	no data		
Mac	223	15	D				STR22, STR23	R	northern white-cedar, balsam fir, yellow birch, red spruce, sensitive fern, evergreen wood fern	6" dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Mac	224	15	D						northern white-cedar, balsam fir, yellow birch, cinnamon fern, greater bladder sedge	Depleted matrix with 3% redox. concentrations	Soil saturated to the surface		
Mac	225	15	D						balsam fir, northern white-cedar, cinnamon fern, nodding sedge, Canada reed grass, sensitive fern, evergreen wood fern, three-seeded sedge	4-6" O horizon over depleted matrix with redox. features	Soil saturated to the surface, areas of inundation		
Mac	226	15	D						three-leaved goldthread, cinnamon fern, New York fern, yellow birch, red maple, balsam fir	4" O horizon over depleted matrix	Soil saturated to the surface, areas of inundation		
Mac	227	15	D						balsam fir, yellow birch, black ash, speckled alder, cinnamon fern, sensitive fern, Canada reed grass	Depleted matrix with redox. features	Soil saturated to the surface, areas of inundation		
Mac	228	15	D						evergreen wood fern, cinnamon fern, Canada dwarf-dogwood, balsam fir, black ash, common winterberry, yellow birch	6" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation		
Mac	229	15	D	D				VP06AA_M	evergreen wood fern, cinnamon fern, Canada dwarf-dogwood, balsam fir, black ash, common winterberry, yellow birch	6" O horizon over depleted matrix	Soil saturated to the surface, areas of inundation	Mapped IWWH	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mac	230	15		D					R, H	speckled alder, royal fern, sensitive fern	Disturbed alluvial soils over depleted matrix	Adjacent to stream	Mapped IWWH. Little Molonkus Stream.
Mac	231	15		D					R, H	speckled alder, sensitive fern, eastern rough sedge	Flooded soils over depleted matrix	Adjacent to stream	Mapped IWWH. Little Molonkus Stream
Mac	232	15	D				SVP52D D_N	H		northern white-cedar, eastern hemlock, balsam fir, yellow birch, black ash, cinnamon fern, evergreen wood fern, dwarf raspberry	Depleted matrix with redox. concentrations	Soil saturated to the surface	Mapped IWWH. Vernal pool is natural but has permanent hydrology
Mac	484	16	D					H		northern white-cedar, black ash, yellow birch, red maple, winterberry, balsam fir, three-seeded sedge, mad-dog skull cap, royal fern, marsh fern, dwarf enchanter's nightshade	Histosol, 16"+ organic material	Soil saturated to the surface, water stained leaves, free water at the surface	
Mac	233	15			D		SVP100 CFM_N	H		no data	no data	no data	Mapped IWWH Significant Vernal Pool
Mac	234	16	D			D	SVP09T T_N	H		red maple, eastern hemlock, balsam fir, yellow birch, northern white-cedar, winterberry, cinnamon fern	Ponded	Wetland is inundated	Significant Vernal Pool
Mac	235	16	D			D	SVP10T T_N	H		red maple, eastern hemlock, balsam fir, yellow birch, northern white-cedar, winterberry, cinnamon fern	Ponded	Wetland is inundated	Significant Vernal Pool
Mac	236	16	D							yellow birch, red maple, balsam fir, hemlock, gray birch, speckled alder	4-5" O horizon over 2-3" dark A horizon over a depleted B horizon with 5% redox. concentrations	Soil saturated to the surface	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mac	237	16	D						yellow birch, red maple, balsam fir, hemlock, gray birch, speckled alder	4-5" O horizon over 2-3" dark A horizon over a depleted B horizon with 5% redox. concentrations	Soil saturated to the surface		
Mac	238	16	D				^	VP64AA_N	R	northern white-cedar, balsam fir, eastern hemlock, red maple	6-8" disturbed alluvial O/A horizons mixed over a depleted matrix with 25% redox. concentrations	Areas of inundation	^Within 25' of Molonkus Stream, not directly connected to STR25
Mac	239	16	D							northern white-cedar, yellow birch, balsam fir, eastern hemlock, red maple	4" O horizon over a depleted matrix with redox. concentrations	Areas of inundation (frozen), soil saturated to the surface	
Mac	240	16	D							northern white-cedar, yellow birch, balsam fir, red maple	4" O horizon over a depleted matrix with 10% redox. concentrations	Soil saturated to the surface	
Mac	241	16	D							northern white-cedar, yellow birch, red maple, balsam fir, cinnamon fern	3-6" O horizon over a depleted B horizon with 10% redox. concentrations	Soil saturated to the surface	
Mac	242	16	D							eastern hemlock, red maple, yellow birch, balsam fir, cinnamon fern	6" O horizon over a depleted matrix with redox. concentrations	Areas of inundation, soil saturated to the surface	
Mac	243	16			D					no data	no data	no data	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mac	244	16	D	D					red maple, northern white-cedar, speckled alder, common winterberry, balsam fir, common woolsedge, broad-leaved cat-tail	24+'' O horizon	Soil saturated to the surface, often flooded		
Mac	245	17	D	D			STR26	R	common soft rush, common woolsedge, red raspberry, nodding sedge, sensitive fern, cinnamon fern, Canada dwarf-dogwood, three-leaved goldthread, speckled alder, yellow birch, red spruce, balsam fir; eastern hemlock, fiddlehead fern, golden saxifrage	5'' dark A horizon over depleted matrix; 8'' O horizon over 4'' A horizon over depleted matrix with redox. concentrations	Inundated drainage patterns, soil saturated to the surface; wetland drainage patterns	Arbo Brook.	
Mac	246	17	D				STR26	R	red spruce, yellow birch, northern white-cedar, eastern hemlock, fiddlehead fern, slender wood-reed, sensitive fern	Seasonally flooded soils with A horizon over depleted matrix	Soil saturated to the surface, areas of inundation	Arbo Brook.	
Mac	247	17	D				STR26	R	yellow birch, balsam fir, eastern hemlock, sensitive fern, evergreen wood fern	Seasonally flooded soils with A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation	Arbo Brook	
Mac	248	17	D	D					yellow birch, eastern hemlock, balsam fir, red raspberry, common woolsedge, lance-leaved American-aster, fringed willow-herb, dwarf raspberry, Canada reed grass	6-8'' dark A horizon over depleted B horizon with redox. features	Soil saturated to the surface, areas of inundation, wetland drainage patterns		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Mac	249	17	D						northern white-cedar, balsam fir, yellow birch, eastern hemlock, cinnamon fern, three-seeded sedge, crested wood fern	Dark mucky A horizon over depleted matrix with redox. features	Soil saturated to the surface, areas of inundation		
Mac	250	17		D					yellow birch, red maple, cinnamon fern, dwarf raspberry, three-seeded sedge, common wrinkle-leaved goldenrod, evergreen wood fern	Dark A horizon over depleted matrix	Soil saturated to the surface, areas of inundation		
Mac	251	17	D				STR27	R	yellow birch, northern white-cedar, balsam fir, eastern hemlock, cinnamon fern, northern water-horehound	8" mucky O/A horizon over depleted matrix	Soil saturated to the surface		
Mac	252	17	D			D	STR27	R	yellow birch, northern white-cedar, balsam fir, cinnamon fern, narrow leaved-speedwell, three-leaved goldthread, three-seeded sedge	Deep mucky soils, flooded	Soil saturated to the surface, wetland drainage patterns, areas of inundation		
Mac	253	17	D						cinnamon fern, dwarf raspberry, red raspberry, common wrinkle-leaved goldenrod	4" O horizon over depleted matrix	Soil saturated to the surface, areas of inundation		
Mac	254	17	D		D		VP23MA_M, VP63AA_M		balsam fir, red maple, shining sedge, fringed sedge, sensitive fern, reed canary grass, common soft rush, common woolsedge	5" Oa horizon over a depleted matrix	Areas of inundation, soil saturated to the surface		
Mac	255	17	D	D			SVP24M_A_N	H	northern white-cedar, balsam fir, red spruce, common woolsedge, sensitive fern, cinnamon fern, fowl manna grass	Shallow organic soil over bedrock	6-12" standing water, soil saturated to the surface	Significant Vernal Pool	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology		
Mac	256	17	D						three-leaved goldthread, three-seeded sedge, Canada dwarf-dogwood, dwarf raspberry, coltsfoot, yellow birch, balsam fir, black spruce, speckled alder	36" O horizon	Soil saturated to the surface			
Mac	257	17	D		D				no data	no data	no data			
Mac	258	17	D	D				STR28	R	three-leaved goldthread, three-seeded sedge, Canada dwarf-dogwood, dwarf raspberry, coltsfoot, yellow birch, balsam fir, black spruce, speckled alder, northern white-cedar, black ash	36" O horizon	Soil saturated to the surface, areas of inundation	Macwahoc Stream	
Mac	259	17	D					STR28	VP24MA_N	R	northern white-cedar, balsam fir, yellow birch, speckled alder, sensitive fern, cinnamon fern, evergreen wood fern, fowl manna grass, New York fern, red raspberry	Mucky dark A horizon over depleted matrix	Soil saturated to the surface, areas of inundation, wetland drainage patterns	Macwahoc Stream
Mac	260	18	D								eastern hemlock, red spruce, balsam fir, cinnamon fern, three-seeded sedge, three-leaved goldenrod	Dark A horizon over depleted matrix	Soil saturated to the surface	
Mac	261	18	D						VP25MA_N		northern white-cedar, eastern hemlock, balsam fir, yellow birch, black ash, cinnamon fern, fringed willow-herb, three-seeded sedge, crested wood fern	12" O horizon over gleyed matrix	Areas of inundation	
Mac	262	18	D								no data	no data	no data	
Mac	263	18			D						cinnamon fern, evergreen wood fern, crested wood fern, fowl manna grass	8" O/A horizon over gleyed matrix	Areas of inundation	

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Mac	264	18	D	D			VP01MJ_N, SVP62A_A_N, VP61AA_N, VP60AA_N	H	speckled alder, balsam fir, sensitive fern, three-seeded sedge, red maple, northern white-cedar, dwarf raspberry, nodding sedge, evergreen wood fern	16+" O horizon	Soil saturated to the surface, areas of inundation	Significant Vernal Pool	
Mac	265	18			D		VP02MJ_N, VP58AA_N, SVP59A_A_N	H	speckled alder, three-seeded sedge, sensitive fern, cinnamon fern, evergreen wood fern, crested wood fern, spotted touch-me-not, northern white-cedar	16+" O horizon	Soil saturated to the surface, areas of inundation	Significant Vernal Pool	
Nya	266	18	D		x		VP57AA_N		speckled alder, three-seeded sedge, sensitive fern, cinnamon fern, evergreen wood fern, crested wood fern, spotted touch-me-not, northern white-cedar	16+" O horizon	Soil saturated to the surface, areas of inundation		
Nya	267	18	D		x				speckled alder, northern white-cedar, common wooldsedge, common wrinkle-leaved goldenrod, fowl manna grass, greater bladder sedge, cinnamon fern	Depleted matrix over rock	Areas of inundation, wetland drainage patterns, water stained leaves		
Nya	268	18			D				Canada reed grass, cinnamon fern, sensitive fern, red maple, balsam fir	2" O horizon over 2" dark A horizon over 3-4" depleted B horizon with redox. concentrations	Soil saturated at 2" below surface		
Nya	269	19	D						northern white-cedar, balsam fir, three-seeded sedge, American twinflower, Canada dwarf-dogwood, cinnamon fern	1-2" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation		

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Nya	270	19	D	x					northern white-cedar, balsam fir, three-seeded sedge, American twinflower, Canada dwarf-dogwood, cinnamon fern	1-2" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation		
Nya	271	19	D	D					speckled alder, red maple, northern white-cedar, balsam fir, sensitive fern, northern bugleweed	1-2" organic over a depleted matrix with redox. concentrations	Wetland drainage patterns, areas of inundation, soil saturated at the surface		
Nya	272	19			D		VP27MA_M		rattlesnake manna grass, sensitive fern, nodding sedge	6-7" O/A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, areas of inundation		
Nya	273	19	D	D					balsam fir, eastern hemlock, yellow birch, gray birch, cinnamon fern, common wrinkle-leaved goldenrod, Canada dwarf-dogwood, three-leaved goldthread, three-seeded sedge	Depleted matrix with redox. features	Soil saturated to the surface, areas of inundation		
Nya	274	19	D	D					balsam fir, eastern hemlock, yellow birch, gray birch, cinnamon fern, common wrinkle-leaved goldenrod, Canada dwarf-dogwood, three-leaved goldthread, three-seeded sedge, northern white-cedar, red spruce, common woolsedge, tawny cottonsedge, boreal bog-sedge, Billing's sedge	Depleted matrix with redox. features; 16+'' O horizon	Soil saturated to the surface, areas of inundation; Soil saturated to the surface		
Nya	275	19			D				no data	no data	no data		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Nya	276	19			D				northern white-cedar, yellow birch, long-beaked willow, common wrinkle-leaved goldenrod, fowl manna grass, fringed sedge	2-4" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
Nya	277	19			D				common woolsedge, calico American-aster, northern white-cedar, tall white-aster, pussy willow, cinnamon fern	1-4" dark A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Nya	278	19			D		STR29	R	common woolsedge, calico American-aster, northern white-cedar, tall white-aster, pussy willow, cinnamon fern	1-4" dark A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Nya	279	19	D				STR29	R	northern white-cedar, eastern hemlock, yellow birch, balsam fir, red spruce, cinnamon fern, sensitive fern, American linden, fowl manna grass, crested wood fern, greater bladder sedge	4-6" dark A horizon over depleted matrix with 5-10% redox. concentrations	Soil saturated to the surface, areas of standing water surrounding stream		
Nya	280	19	D						yellow birch, red spruce, balsam fir, eastern hemlock, green ash, evergreen wood fern, Canada dwarf-dogwood	8" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
Nya	281	19		D					yellow birch, common wrinkle-leaved goldenrod, common soft rush, lance-leaved American-aster, evergreen wood fern	3" dark A horizon over depleted matrix with 3% redox. concentrations	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Nya	282	19			D				sallow sedge, red raspberry, common wrinkle-leaved goldenrod, tall white-aster, slender wood-reed, common soft rush, sensitive fern	Disturbed A horizon over depleted matrix with 15% redox. features	Soil saturated to the surface, areas of inundation		
Nya	283	19			D				common woolsedge, sallow sedge, fowl manna grass, pointed broom sedge	2-4" dark A horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface, area of 4-6" standing water		
Nya	284	19			D		VP32ED_M		sallow sedge, red raspberry, common wrinkle-leaved goldenrod, tall white-aster, slender wood-reed, common soft rush	Disturbed A horizon over depleted matrix with 15% redox. features	Soil saturated to the surface, areas of inundation		
Nya	285	20	D						northern white-cedar, eastern hemlock, red spruce, balsam fir, cinnamon fern, common snowberry, Canada dwarf-dogwood	Dark A horizon over depleted matrix with 10% redox. concentrations , some areas of rock	Soil saturated to the surface		
Nya	286	20	D						northern white-cedar, red spruce, red maple, balsam fir, cinnamon fir, evergreen wood fern, Canada dwarf-dogwood	8-16" O horizon over depleted matrix with redox. features	Soil saturated to the surface		
Nya	287	20	D				VP56AA_M		red maple, quaking poplar, red raspberry, meadowsweet, sensitive fern, nodding sedge	Depleted matrix with 5% redox. features under a dark A horizon	Soil saturated to surface in 85% of wetland, surface drainage runs through wetland		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Nya	288	20			D				eastern rough sedge, common wrinkled-leaved goldenrod, common soft rush, common wooldsedge, three-seeded sedge, balsam fir, evergreen wood fern	Shallow dark A horizon over depleted matrix	Soil saturated to the surface, wetland drainage patterns		
Nya	289	20	D		x				balsam fir, paper birch, sensitive fern, red raspberry, crested wood fern, bristly blackberry	Shallow dark A horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Nya	290	20	D		x		VP06-1MJ_M, VP05MJ_M, VP55AA_M		red maple, balsam fir, sensitive fern, three-seeded sedge, nodding sedge, cinnamon fern, northern white-cedar	Shallow dark A horizon over sandy, depleted matrix	Soil saturated to the surface, areas of inundation, wetland drainage patterns		
Nya	291	20	D				VP54AA_M	H	red maple, balsam fir, sensitive fern, three-seeded sedge, nodding sedge, cinnamon fern, northern white-cedar	Shallow dark A horizon over sandy, depleted matrix	Soil saturated to the surface, areas of inundation, wetland drainage patterns	Mapped IWWH	
Nya	292	20	D						eastern hemlock, green ash, red maple, balsam fir, sallow sedge, common wooldsedge, cinnamon fern	2" A horizon over depleted B horizon	Soil saturated to the surface, water stained leaves		
Ree	293	20	D	x					balsam fir, yellow birch, red maple, gray birch, rattlesnake manna grass, common wooldsedge, cinnamon fern	2" O horizon over 1" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Ree	294	20		D					yellow birch, gray birch, balsam fir, long-beaked willow, green ash, red raspberry, nodding sedge, rosy meadowsweet, common wrinkle-leaved goldenrod	Dark A horizon over depleted matrix with 5% redox. features	Soil saturated to the surface, wetland drainage patterns		
Ree	295	20	D				VP06-2MJ_M		northern white-cedar, black ash, balsam fir, yellow birch, speckled alder, common wrinkle-leaved goldenrod, mad dog skullcap, calico American-aster	16+" O horizon	Soil saturated to the surface, areas of inundation		
Ree	296	20	D				VP41ED_N, VP42ED_N		northern white-cedar, red maple, balsam fir, red spruce, speckled alder, common winterberry, cinnamon fern, bristly swamp currant, crested wood fern, northern water-horehound, sensitive fern	8-16" O horizon over depleted matrix with redox. features	Soil saturated to the surface, areas of inundation		
Ree	297	21			D				balsam fir, common wooldsedge, fringed willow-herb, mad dog skullcap, cinnamon fern, crested wood fern, sensitive fern	3-6" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
Ree	298	21	D						northern white-cedar, yellow birch, balsam fir, red maple, cinnamon fern, bristly swamp currant, northern wood sorrel, sensitive fern	6" O horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Ree	299	21	D						yellow birch, balsam fir, cinnamon fern, evergreen wood fern, Canada reed grass, common wrinkled-leaved goldenrod	4-6" dark A horizon over depleted matrix with 5-10% redox. concentrations	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Ree	300	21			D				balsam fir, common woosedge, fringed willow-herb, mad dog skullcap, cinnamon fern, crested wood fern, sensitive fern	3-6" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
Ree	301	21	D						northern white-cedar, red spruce, balsam fir, red maple, gray birch, cinnamon fern, crested wood fern, three-seeded sedge, Canada reed grass	16+" O horizon	Soil saturated to the surface, areas of inundation		
Ree	302	21	D				STR31	R	northern white-cedar, red spruce, balsam fir, yellow birch, cinnamon fern, three-seeded sedge	10-12" O horizon over gleyed matrix	Soil saturated to the surface, areas of inundation		
Ree	303	21	D						northern white-cedar, yellow birch, balsam fir, red maple, cinnamon fern, bristly swamp currant, northern wood sorrel, sensitive fern	6" O horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Ree	304	21	D						northern white-cedar, yellow birch, balsam fir, red maple, cinnamon fern, bristly swamp currant, northern wood sorrel, sensitive fern	6" O horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
Ree	305	21	D						red maple, balsam fir, eastern hemlock, sensitive fern, green ash, yellow birch, drooping sedge	Thin dark A horizon over a depleted matrix	Soil saturated to the surface		
Ree	306	21	D						northern white-cedar, balsam fir, yellow birch, cinnamon fern	Depleted matrix	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Ree	307	21	D						eastern hemlock, balsam fir, yellow birch, northern white-cedar, cinnamon fern, wood horsetail	4-6" O horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, water stained leaves		
Ree	308	21	D						northern white-cedar, balsam fir, black ash, American elm, yellow birch, red maple	Areas of 16"+ organic material, areas of a depleted matrix	Areas inundated, soil saturated to the surface		
Ree	309	22	D				VP51AA_M		red maple, balsam fir, northern white-cedar, sensitive fern, fringed sedge, dwarf raspberry, northern water-horehound	2" O horizon over 1" A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves, areas of inundation		
Ree	310	22		x		D	VP50AA_M		common woolsedge, white meadowsweet, balsam fir	Open water, frozen at time of survey	Inundated		
Ree	311	22	x			D	VP53AA_M, VP52AA_M		speckled alder, balsam fir, northern white-cedar, sensitive fern, common woolsedge, meadowsweet	Areas with open water frozen at time of survey, areas with a depleted matrix	Inundated		
Ree	312	22	D						eastern hemlock, balsam fir, three-leaved goldthread	2" O horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface, water stained leaves		
Ree	313	22		D					red spruce, tall cottonsedge, gray birch, witherod, sheep American-laurel	2" O horizon over dark A horizon over depleted matrix with redox. concentrations and depletions	Soil saturated to the surface, areas of inundation		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Ree	314	22			D				common woolsedge, broad-leaved cat-tail, fowl manna grass, common soft rush, rosy meadowsweet	2" O horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, areas of inundation		
Ree	315	22	D						balsam fir, Canada dwarf-dogwood, common soft rush, northern white-cedar, common woolsedge, greater bladder sedge, crested wood fern	1" O horizon over 3" dark A horizon over 4" depleted B horizon with 5% redox. concentrations	Soil saturated to the surface, areas of inundation		
Ree	316	22	D			STR32		R	balsam fir, red maple, yellow birch, slender wood-reed, American water-horehound, evergreen wood fern	2" O horizon over 6" depleted B horizon with redox. concentrations and depletions	Soil saturated to the surface, areas of inundation		
Ree	317	22	D				VP02AA_M		balsam fir, yellow birch, black ash, evergreen wood fern, cinnamon fern	Depleted matrix under dark A horizon	Soil saturated to the surface, areas of inundation		
Ree	318	22	D						northern white-cedar, yellow birch, red spruce, three-seeded sedge, three-leaved goldthread, common snowberry,	4-6" dark A horizon over depleted matrix with 10-15% redox. concentrations	Soil saturated to the surface		
Ree	319	22	D	D					northern white-cedar, red maple, red spruce, balsam fir, cinnamon fern, three-seeded sedge	9" organic over a low chroma matrix	Soil saturated to the surface		
Ree	320	22	D	D		STR33		R	northern white-cedar, red spruce, balsam fir, yellow birch, greater bladder sedge, three-seeded sedge, cinnamon fern, Canadian reed grass	8-10" dark A horizon over a depleted matrix with redox. features	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Ree	321	23			D				rosy meadowsweet, white meadowsweet, red maple, common woolsedge, rattlesnake manna grass, short-tailed rush, Canada reed grass	1-3" A over depleted matrix with 20% redox. concentrations	Soil saturated to the surface		
Ree	322	23	D						red spruce, yellow birch, balsam fir, red maple, three-seeded sedge, cinnamon fern, fowl manna grass	5-6" dark mucky A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, water stained leaves		
Ree	323	23			D				red maple, white meadowsweet, common woolsedge, fowl manna grass, fringed sedge, fringed willow herb, rattlesnake manna grass, sensitive fern, lance-leaved aster	2-4" dark murky A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, free standing water at 4"		
Ree	324	23	D				VP115S M_M		cinnamon fern, three-seeded sedge, evergreen wood fern, dwarf raspberry, yellow birch, black ash, balsam fir, three-leaved goldthread, northern white-cedar	Depleted matrix under dark A horizon	Soil saturated to the surface, areas of inundation		
REE	485	23	D						balsam fir, grey birch, cinnamon fern, dwarf raspberry, three-leaved goldthread, yellow birch, red maple, sensitive fern	Depleted matrix under dark A horizon	Soil saturated to the surface, areas of inundation		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
GLE	486	23			D				sensitive fern, speckled alder, drooping sedge, spotted joe-pye weed, white meadowsweet, fringed willow herb, pink meadowsweet	Depleted matrix under dark A horizon; 4" O horizon over a depleted matrix with many, coarse, prominent redox. features, soil disturbed	Soil saturated to the surface, areas of inundation, water stained leaves, disturbed hydrology		
Gle	325	23	D	D			VP25BE_M	R	balsam fir, yellow birch, black ash, red maple, grey birch, speckled alder, drooping sedge, interrupted fern, three-seeded sedge, dwarf raspberry, yellow birch, fringed sedge	Depleted matrix under dark A horizon; 4" O horizon over a depleted matrix with many, coarse, prominent redox. features, soil disturbed	Soil saturated to the surface, areas of inundation, water stained leaves, disturbed hydrology	Smith Brook obstructed by beaver dam. Smith Brook within 25'	
GLE	326	23	D	D					red spruce, balsam fir, green ash, red maple, yellow birch, eastern hemlock, common soft rush, common wooldsedge, rattlesnake manna grass, sensitive fern	Dark A horizon over depleted B horizon	Soil saturated to the surface, areas of inundation		
GLE	327	23	D				STR34	VP81DD_M	R	balsam fir, yellow birch, marsh fern, fowl manna grass, northern white-cedar, red maple, red spruce, crested wood fern; green ash, speckled alder, quaking poplar, crested wood fern, cinnamon fern, sensitive fern, broad-leaved cat-tail, evergreen wood fern	2-6" dark O/A horizon over depleted matrix; 6" dark A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, stream, some small inundated ruts	Smith Brook.

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Gle	328	24		D					Canada reed grass, speckled alder, long-beaked willow, balsam fir, witherod, gray birch	Disturbed, 2" O horizon over dark A horizon over depleted matrix with redox. concentrations and depletions	Soil saturated to the surface, areas of inundation		
Gle	329	24	D						black ash, balsam fir, yellow birch, northern white-cedar, speckled alder, cinnamon fern, Canada reed grass	2" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface		
Gle	330	24		D			VP19DD_M		speckled alder, black ash, white meadowsweet, royal fern	Disturbed, 1-2" O horizon over depleted matrix	Water stained leaves, water marks on trees		
Gle	331	24		D					speckled alder, black ash, greater bladder sedge, fowl manna grass, crested wood fern	4-5" dark A horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface, areas of free water at 3"		
Gle	332	24	D						Canada reed grass, yellow birch, balsam fir, northern white-cedar, black ash	2" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface		
Gle	333	24		D					speckled alder, red maple, pussy willow, northern white-cedar, sensitive fern, fowl manna grass	2" O horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, areas of inundation		
Gle	334	24			D				balsam fir, red spruce, northern white cedar, red maple, sensitive fern, common wrinkle-leaved goldenrod, fowl manna grass, crested wood fern	4-6" dark A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Gle	335	24	D	D			VP20DD_M		speckled alder, fringed sedge, sensitive fern, red maple; northern white-cedar, balsam fir, black ash, cinnamon fern	1" O horizon over depleted matrix; 2" O horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface, water stained leaves, areas of inundation		
Gle	336	24	D	D			VP53DD_N, VP54DD_N		northern white-cedar, speckled alder, pussy willow, balsam fir, witherod, red maple, cinnamon fern, three-seeded sedge, fowl manna grass	16+" O horizon	Areas of inundation		
Gle	337	24	D	D					black spruce, rhodora, Labrador-tea, tall cottonsedge, large cranberry, speckled alder, few-flowered sedge, boreal bog-sedge	16+" O horizon	Areas of inundation		
Gle	338	25		D					speckled alder, unidentifiable grass	Depleted matrix below a dark mineral soil with redox. concentrations and depletions	Areas of inundation, soil saturated to the surface		
Gle	339	25			D				sensitive fern, nodding sedge, common soft rush, northern white-cedar	1" A horizon over depleted B horizon with redox. concentrations and depletions	Soil saturated to the surface		
Gle	340	25	D						balsam fir, northern white-cedar, three-seeded sedge, cinnamon fern, sensitive fern	2-4" O horizon over rock or depleted matrix	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Gle	341	25	D						American larch, balsam fir, red spruce, speckled alder, northern white-cedar, sensitive fern, cinnamon fern, meadowsweet, purple-stemmed American-aster	Histic epipedon	no data		
Gle	342	25		D			VP21DD_M		speckled alder, northern white-cedar, witherod, balsam fir, cinnamon fern, royal fern, fowl manna grass, sensitive fern	16+" O horizon	Water stained leaves, wetland drainage patterns, areas of inundation		
Gle	343	25	D	x			VP22DD_M, VP55DD_M		red maple, quaking poplar, American larch, speckled alder, witherod, balsam fir, cinnamon fern, Canada-mayflower	Depleted B horizon with redox. concentrations and depletions	Areas of inundation, soil saturated to the surface		
Gle	344	25		D					balsam fir, speckled alder, northern white-cedar, American twinflower, witherod	2-3" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface		
Gle	345	25	D		x			STR35	quaking poplar, red maple, green ash, black ash, speckled alder, white meadowsweet, fowl manna grass, sensitive fern, cinnamon fern, Canada reed grass, sallow sedge, common woolsedge	1-2" A horizon over depleted B horizon with 25% redox. concentrations and 10% redox. depletions	Soil saturated to the surface, water stained leaves, areas of inundation	Battle Brook.	
Gle	346	25	D					STR35	quaking poplar, red maple, green ash, black ash, speckled alder, white meadowsweet, fowl manna grass, sensitive fern, cinnamon fern, Canada reed grass, sallow sedge, common woolsedge	1-2" A horizon over depleted B horizon with 25% redox. concentrations and 10% redox. depletions	Soil saturated to the surface, water stained leaves, areas of inundation	Mapped IWWH. Battle Brook	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Gle	347	25	D						northern white-cedar, balsam fir, quaking poplar, red maple, speckled alder, cinnamon fern, sensitive fern	2-6" O/A horizon over depleted B horizon	Soil saturated to the surface, areas of inundation, water stained leaves		
Gle	348	25	D		x				northern white-cedar, balsam fir, red spruce, red maple, cinnamon fern, common woosedge, common soft rush, fowl manna grass	Dark A horizon over depleted B horizon with 20% redox. concentrations	Soil saturated to the surface		
Gle	349	25	D						red maple, northern white-cedar, eastern hemlock, yellow birch, balsam fir, cinnamon fern, sensitive fern	6-8" O horizon over depleted B horizon; 1-3" mucky A horizon over depleted B horizon with redox. concentrations	Soil saturated to the surface; Wetland drainage patterns, areas of inundation		
Gle	350	26	D					H	northern white-cedar, American larch, red maple, cinnamon fern, bristly blackberry, three-seeded sedge	20+" O horizon	Soil saturated to the surface, areas of inundation, water stained leaves	Mapped IWWH	
Gle	351	26	D						northern white-cedar, red maple, balsam fir, three-seeded sedge, cinnamon fern	3" O horizon over 2" dark, mucky A horizon over 3" depleted matrix with redox. concentrations and depletions	Soil saturated to the surface, elevated roots	Rare plants: showy lady's slipper, swamp-fly honeysuckle.	
Gle	352	26			D		SVP23D D_N	H	black ash, American elm, northern white-cedar, royal fern, sensitive fern, three-seeded sedge, eastern rough sedge	12-16" O horizon over dark A horizon with redox. depletions	Areas of inundation, water marks on trees	Significant Vernal Pool	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
	353	26		D					speckled alder, balsam fir, common woosedge, sensitive fern, swollen beaked sedge, black ash,	16" O horizon	Soil saturated to the surface, some areas of inundation		
Gle	354	26	D					E, H	northern white-cedar, cinnamon fern, balsam fir, small yellow water crowfoot	Ponded, 16+ O horizon	Areas of inundation	Rare plant small yellow water crowfoot located in wetland; Wetland contains greater than 20,000 sq.ft. of open water/emergent vegetation.	
Gle	355	26		D					American larch, speckled alder, witherod, northern white-cedar, balsam fir, gray birch, quaking poplar, red maple, cinnamon fern, royal fern, black ash, fringed sedge, three-seeded sedge, sensitive fern	Histosol, 16+ organic material	Soil saturated to the surface, topographical depression at the base of a slope		
Gle	356	26	D	D					American larch, speckled alder, witherod, northern white-cedar, balsam fir, gray birch, quaking poplar, red maple, cinnamon fern, royal fern, black ash, fringed sedge, three-seeded sedge, sensitive fern	16+ O horizon; 2-6" O horizon over 3" dark A horizon over depleted matrix with redox. depletions	Soil saturated to the surface, elevated roots		
Gle	357	27	D					VP56DD _N	northern white-cedar, balsam fir, swamp red currant, common winterberry, quaking poplar, cinnamon fern, three-seeded sedge, white meadowsweet	16+ O horizon	Soil saturated to the surface, elevated roots		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Gle	358	27	D						northern white-cedar, red spruce, balsam fir, speckled alder, three-seeded sedge, Canadian reed grass, crested wood fern, foam-flower	6" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface		
Gle	359	27	D				STR36, STR37	H, R	northern white-cedar, American larch, speckled alder, shrubby-cinquefoil, black spruce, small yellow water crowfoot	16+'' O horizon	Soil saturated to the surface, stream	Alder Brook. Rare plant small yellow water crowfoot, located in wetland. Mapped IWWH.	
Gle	360	27	D					H	northern white-cedar, balsam fir, American larch, sheep American-laurel, slender wood-reed, three-seeded sedge	8-10'' O horizon over rock or B horizon with redox. concentrations	Soil saturated to the surface	Mapped IWWH	
Gle	361	28	D						quaking poplar, black ash, gray birch, balsam fir, northern white-cedar, sensitive fern, common woolsedge	8-12'' O horizon over depleted matrix with redox. features	Soil saturated to the surface, areas of inundation		
Gle	362	28		D					long-beaked willow, yellow birch, quaking poplar, sensitive fern, fowl manna grass, Canada reed grass	Dark A over a low chroma matrix with redox. concentrations	Free water at 2'' below surface, soil saturated to the surface		
Gle	363	28	D	x			SVP65A A_N	H	northern white-cedar, balsam fir, yellow birch, speckled alder, Canada reed grass, fowl manna grass, sensitive fern, cinnamon fern, common woolsedge	5-6'' O horizon over depleted B horizon	Soil saturated to the surface, areas of inundation, water stained leaves	Significant Vernal Pool	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Gle	364	28	D							northern white-cedar, black ash, green ash, quaking poplar, balsam fir, yellow birch, cinnamon fern, fowl manna grass, sensitive fern	6-10" O/A horizon over depleted matrix with redox. features	Soil saturated to the surface, areas of inundation	
Gle	365	28	D	D	D					northern white-cedar, red spruce, red maple, balsam fir, yellow birch, speckled alder, cinnamon fern, crested wood fern, Canada reed grass, three-seeded sedge, common woolsedge	Ponded, 36" of organic soil material	Soil saturated to the surface, areas of inundation	
Gle	366	28	D							quaking poplar, black ash, balsam fir, American elm, sensitive fern, fiddlehead fern, purple-stemmed American-aster, crested wood fern	6-8" very dark A horizon over depleted matrix with 3% redox. concentrations	Soil saturated to the surface	
T3R3	367	28	D							northern white-cedar, black ash, balsam fir, quaking poplar, red maple, sweet gale, fowl manna grass, sensitive fern, cinnamon fern, crested wood fern	8-18" O horizon over depleted matrix	Soil saturated to the surface, areas of inundation	
T3R3	368	28	D							northern white-cedar, red spruce, balsam fir, red maple, quaking aspen, cinnamon fern, bracken fern, evergreen wood fern, greater bladder sedge	8-10" O horizon over depleted matrix with 5-10% redox. concentrations	Soil saturated to the surface	
T3R3	369	29	D				^	H, R		balsam fir, yellow birch, red spruce, red maple, northern white cedar, black ash, American elm, royal fern, cinnamon fern, evergreen wood fern	4-6" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, small pool containing 10-20" standing water	LURC Mapped DWA ^Within 25' of stream, not a direct connection to STR38

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	370	29	D					H	northern white-cedar, red spruce, cinnamon fern, hoary sedge	4" O horizon over dark A over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, areas of free water at 5"	LURC Mapped DWA	
T3R3	371	29	D					H	northern white-cedar, red spruce, balsam fir, cinnamon fern, Canada dark-dogwood	4" O horizon over 2" dark A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface, areas of free water at 5"	LURC Mapped DWA	
T3R3	372	29	D						northern white-cedar, red spruce, balsam fir, black ash, Canada dwarf-dogwood,	4-6" O horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface		
T3R3	373	29	D					H	northern white-cedar, balsam fir, red spruce, black ash, cinnamon fern, three-seeded sedge, Canada reed grass	8-10" O horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface	LURC Mapped DWA	
T3R3	374	29	D					H	black ash, red maple, yellow birch, northern white-cedar, balsam fir, witherod, sensitive fern, cinnamon fern, common wrinkle-leaved goldenrod	6" dark, mucky A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, wetland drainage patterns	LURC Mapped DWA	
T3R3	375	29	D						black ash, red maple, yellow birch, northern white-cedar, balsam fir, witherod, sensitive fern, cinnamon fern, common wrinkle-leaved goldenrod	8-18" O horizon over depleted matrix	Soil saturated to the surface, wetland drainage patterns		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	376	29	D						northern white-cedar, yellow birch, red spruce, red maple, balsam fir, speckled alder, three-seeded sedge, sensitive fern, cinnamon fern, fowl manna grass	16+" O horizon	Soil saturated to the surface		
T3R3	377	29		D				VP54ED_M	speckled alder, northern white-cedar, common woolsedge, common wrinkle-leaved goldenrod, fringed sedge, common soft rush	4" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, areas of 6-12" standing water		
T3R3	378	29			D			VP53ED_M	fringed sedge, common woolsedge, northern white-cedar, common soft rush, common wrinkle-leaved goldenrod	2-4" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, areas of 10-20" of standing water		
T3R3	379	29	D					H	northern white-cedar, balsam fir, yellow birch, red spruce, witherod, three-seeded sedge, common woolsedge, nodding sedge	3" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface	LURC Mapped DWA	
T3R3	380	29	D						northern white-cedar, red spruce, balsam fir, red raspberry, cinnamon fern, three-seeded sedge, common woolsedge, common soft rush, Canada dwarf-dogwood	4" organic over depleted matrix, gleyed soil	Soil saturated to the surface		
T3R3	381	30	D						black spruce, northern white-cedar, red maple, American larch, three-seeded sedge, three-leaved false Solomon's-seal, common woolsedge	16+" O horizon	Soil saturated to the surface, areas of inundation		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	382	30	D						northern white-cedar, red spruce, eastern hemlock, red maple, three-leaved goldthread, cinnamon fern, common woolsedge	4-6" organic over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
T3R3	383	30			D				balsam fir, red spruce, common woolsedge, evergreen wood fern, fringed sedge	4" O horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface		
T3R3	384	30			D				sensitive fern, common wrinkle-leaved goldenrod, black-girdled woolsedge	2-4" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
T3R3	385	30	D					VP52ED_M	northern white-cedar, balsam fir, yellow birch, red spruce, witherod, three-seeded sedge, common woolsedge, nodding sedge	3" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
T3R3	386	30	D				STR39	R	northern white-cedar, balsam fir, yellow birch, red spruce, witherod, three-seeded sedge, common woolsedge, nodding sedge	3" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
T3R3	387	30		D				VP35ED_M	speckled alder, spotted Joe-pye weed, sensitive fern, smooth goldenrod, northern water-horehound, white meadowsweet	Disturbed by road making activity, ponded	Soil saturated to the surface, areas of inundation, water stained leaves		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	388	30			D			E	northern white-cedar, speckled alder, common woolsedge, sensitive fern, northern water-horehound, common wrinkle-leaved goldenrod, crested wood fern	16+" O horizon	Soil saturated to the surface, areas of inundation	Wetland contains greater than 20,000 sq.ft. of open water/emergent vegetation	
T3R3	389	30	D				VP50ED_N		northern white-cedar, balsam fir, yellow birch, red spruce, witherod, three-seeded sedge, common woolsedge, nodding sedge	3" O horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		
T3R3	390	30	D				VP50ED_M		northern white-cedar, balsam fir, red maple, speckled alder, winterberry	5-8" O horizon over a depleted matrix with redox. concentrations	Areas of inundation, soil saturated to the surface		
T3R3	391	30	x		D		VP49ED_M		northern white-cedar, balsam fir, yellow birch, red maple	5" O horizon over 2" dark A horizon over a depleted B horizon with redox. concentrations	Areas of inundation, soil saturated to the surface	Emergent portion is disturbed	
T3R3	392	30	D						northern white-cedar, balsam fir, yellow birch, red maple	5" O horizon over 2" dark A horizon over a depleted B horizon with redox. concentrations	Areas of inundation, soil saturated to the surface		
T3R3	393	30		D					northern white-cedar, balsam fir, eastern hemlock, speckled alder	1" O horizon over 6" A horizon over a depleted B horizon with 10% redox. concentrations	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	394	30	D						northern white-cedar, yellow birch, balsam fir, red maple, red spruce, cinnamon fern	4-10" O horizon over a depleted B horizon with >5% redox. concentrations	Soil saturated to the surface, areas of inundation, wetland drainage patterns		
T3R3	395	30	D	D			STR46	VP12TT_M, VP48ED_M	R	yellow birch, balsam fir, red maple, black ash, speckled alder, gray birch, wrinkle-leaved goldenrod	4-10" O horizon over a depleted B horizon with >5% redox. concentrations	Wetland drainage patterns, areas of inundation	
T3R3	397	30	D							northern white-cedar, balsam fir, red maple, crested wood fern, bristly black currant	5-6" dark organic material over a depleted matrix with redox. concentrations	Soil saturated to the surface	
T3R3	398	31	D							northern white-cedar, balsam fir, red maple	6" O horizon over a depleted matrix with 25% redox. concentrations	Soil saturated in the upper 12" of the soil	
T3R3	399	31	D				STR40		R	northern white-cedar, eastern hemlock, balsam fir, yellow birch, mountain holly	20" O horizon, histosol	Soils saturated to the surface, wetland drainage patterns	Proximal to the West Branch of the Mattawamkeag River
T3R3	400	31	D	D			STR40	SVP46E D_N	H, R	balsam fir, red maple, northern white-cedar, eastern hemlock, yellow birch, speckled alder, gray birch, winterberry holly, Canada reed grass	Deep alluvial O/A horizons over a depleted matrix with redox. concentrations	Deep pools of standing water, evidence of flooding by Mattawamkeag River	Mattawamkeag River crossing Significant Vernal Pool

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	401	31	D							balsam fir, red maple, northern white-cedar, eastern hemlock, yellow birch, speckled alder, gray birch, winterberry holly, Canada reed grass	4" O horizon over 6" A horizon over a depleted B horizon with 5% redox. concentrations	Areas of inundation, soil saturated to the surface	
T3R3	402	31		D	D				R	northern white-cedar, red spruce, speckled alder, balsam fir, sweet gale, Canada reed grass, swollen-beaked sedge, common wooldsedge, American elm, Canada goldenrod	6" dark, mucky A horizon over depleted matrix with 10% redox. concentrations ; 10-14" alluvial deposition over depleted, sandy matrix with 3% redox. features	Soil saturated to the surface, areas of inundation, wetland drainage patterns	Beaver Brook.
T3R3	403	31		D					R	northern white-cedar, American elm, speckled alder, sensitive fern, northeastern manna grass, Canada reed grass	Sandy soils, frequently ponded	Soil saturated to the surface	Beaver Brook.
T3R3	404	31	D						H	northern white-cedar, red spruce, balsam fir, yellow birch, speckled alder, sensitive fern, cinnamon fern, evergreen wood fern, crested wood fern	1-2" O horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface, areas of inundation	LURC Mapped DWA

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	405	31	D					H	balsam fir, yellow birch, red maple, cinnamon fern, sensitive fern, fowl manna grass	1" O horizon over 8" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, wetland drainage patterns	LURC Mapped DWA	
T3R3	406	31		D				H	eastern hemlock, balsam fir, yellow birch, cinnamon fern	4-8" O horizon/ dark A horizon over depleted matrix with redox. depletions	Soil saturated to the surface, some areas of inundation	LURC Mapped DWA	
T3R3	407	31			D			H	balsam fir, northern white-cedar, yellow birch, cinnamon fern, evergreen wood fern, greater bladder sedge, partridge-berry	O horizon over depleted matrix with redox. features	Soil saturated to the surface	LURC Mapped DWA	
T3R3	408	31			D				red maple, black ash, yellow birch, evergreen wood fern, cinnamon fern	6" O horizon over depleted matrix with 10% redox. concentrations , disturbed soil	2-3" of standing water, soil saturated to the surface		
T3R3	409	31	D						northern white-cedar, black ash, yellow birch, speckled alder, swollen-beaked sedge, northern wood sorrel, three-seeded sedge, greater bladder sedge	16+" O horizon	Soil saturated to the surface		
T3R3	410	32		D	D				red maple, yellow birch, northern white-cedar, fowl manna grass, red raspberry, sensitive fern, halberd-leaved tearthumb	1-4" dark, mucky A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	411	32		D	D				red maple, yellow birch, northern white-cedar, fowl manna grass, red raspberry, sensitive fern, halberd-leaved tearthumb	1-4" dark, mucky A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		
T3R3	412	32	D						northern white-cedar, black ash, yellow birch, speckled alder, swollen-beaked sedge, northern wood sorrel, three-seeded sedge, greater bladder sedge	16+" O horizon	Soil saturated to the surface		
T3R3	413	32	D				VP44ED_M		northern white-cedar, black ash, yellow birch, speckled alder, swollen-beaked sedge, northern wood sorrel, three-seeded sedge, greater bladder sedge	16+" O horizon	Soil saturated to the surface		
T3R3	414	32	D						northern white-cedar, black ash, yellow birch, speckled alder, swollen-beaked sedge, northern wood sorrel, three-seeded sedge, greater bladder sedge	16+" O horizon	Soil saturated to the surface		
T3R3	415	32		D					yellow birch, balsam fir, evergreen wood fern, cinnamon fern, greater bladder sedge	4-6" dark A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface		
T3R3	416	32			D				yellow birch, evergreen wood fern, sensitive fern, long beech fern, purple-stemmed American-aster, bristly swamp currant	1-3" dark A horizon over depleted matrix with 7% redox. concentrations	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	417	32	D						northern white-cedar, black ash, yellow birch, speckled alder, swollen-beaked sedge, northern wood sorrel, three-seeded sedge, greater bladder sedge	16+" O horizon	Soil saturated to the surface		
T3R3	418	32		D					yellow birch, balsam fir, eastern hemlock, cinnamon fern, fowl manna grass, common wrinkle-leaved goldenrod, fringed willow-herb	4-6" O horizon over areas of rock and depleted matrix with 10% redox. concentrations	Soil saturated to the surface, 6" of water in skidder rut		
T3R3	419	32			D				common woolsedge, tall white-aster, lance-leaved American-aster, common grass-leaved-goldenrod, pointed broom sedge	1" O horizon over depleted matrix with 3% redox. concentrations	Soil saturated to the surface		
T3R3	420	32		D					northern white-cedar, red maple, green ash, eastern hemlock, wood horsetail, Canada goldenrod, tall white-aster, evergreen wood fern	1-2" O horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface		
T3R3	421	32			D				common wrinkle-leaved goldenrod, tall white-aster, lance-leaved American-aster, common grass-leaved-goldenrod, pointed broom sedge	1" O horizon over depleted matrix with 3% redox. concentrations	Soil saturated to the surface		
T3R3	422	32			D				red spruce, red raspberry, evergreen wood fern, fowl manna grass, river horsetail, common wrinkle-leaved goldenrod	4" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T3R3	423	32			D				common wrinkle-leaved goldenrod, tall white-aster, lance-leaved American-aster, common grass-leaved-goldenrod, pointed broom sedge	1" O horizon over depleted matrix with 3% redox. concentrations	Soil saturated to the surface		
T3R3	424	32		D					northern white-cedar, red maple, green ash, eastern hemlock, wood horsetail, Canada goldenrod, tall white-aster, evergreen wood fern, cinnamon fern	1-2" O horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface		
T3R3	425	32		D					yellow birch, balsam fir, eastern hemlock, northern white-cedar, evergreen wood fern, cinnamon fern, sensitive fern, fowl manna grass	4-8" dark A horizon over gleyed matrix with redox. depletions and concentrations	Soil saturated to the surface, some areas of inundation		
T3R3	426	32		D					northern white-cedar, red maple, green ash, eastern hemlock, wood horsetail, Canada goldenrod, tall white-aster, evergreen wood fern, cinnamon fern	1-2" O horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface		
T3R3	427	32	D	D	D			VP122C F_M	northern white-cedar, yellow birch, red maple, red spruce, balsam fir, eastern hemlock, speckled alder, cinnamon fern, common wrinkle-leaved goldenrod, common soft rush, red raspberry	10"+ O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface		
T3R3	428	32			D				balsam fir, common woolsedge, cinnamon fern, common wrinkle-leaved goldenrod, red raspberry, northern white-cedar, Canada dwarf-dogwood, sickle-leaved golden-aster	3-4" dark A horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface, some standing water in ruts		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T4R3	429	32			D				balsam fir, northern white-cedar, common woolsedge, common grass-leaved-goldenrod, nodding sedge, common wrinkle-leaved goldenrod, Canada dwarf-dogwood	1" O horizon over depleted matrix with 5% redox. concentrations	Soil saturated to the surface		
T4R3	430	32	D						northern white-cedar, red spruce, balsam fir, common woolsedge, fringed sedge, common wrinkle-leaved goldenrod, cinnamon fern, three-seeded sedge	3-4" dark A horizon over depleted matrix with 20% redox. concentrations	Soil saturated to the surface, some standing water in ruts		
T4R3	431	32	D						northern white-cedar, balsam fir, yellow birch, red spruce, red maple, speckled alder, fowl manna grass, three-seeded sedge, evergreen wood fern	16"+ O horizon, histosol	Soil saturated to the surface, some areas of inundation		
T4R3	432	33	D						northern white-cedar, black ash, yellow birch, speckled alder, swollen-beaked sedge, northern wood sorrel, three-seeded sedge, greater bladder sedge	16+" O horizon	Soil saturated to the surface		
T4R3	433	33	D						northern white-cedar, black ash, yellow birch, speckled alder, swollen-beaked sedge, northern wood sorrel, three-seeded sedge, greater bladder sedge	16+" O horizon	Soil saturated to the surface		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T4R3	434	33	D	D					northern white-cedar, red spruce, balsam fir, common woolsedge, common wrinkle-leaved goldenrod, fringed willow-herb, pointed broom sedge	4-8" O horizon over areas of rock and gravel with a depleted matrix with 10% redox. concentrations	Soil saturated to the surface, some areas of inundation		
T4R3	435	33	D						northern white-cedar, red spruce, balsam fir, yellow birch, red maple, common woolsedge, fowl manna grass, cinnamon fern, fringed willow-herb	6-8" O horizon over depleted matrix with 40% redox. concentrations and depletions	Soil saturated to the surface, some areas of inundation		
T4R3	436	33			D				smooth white violet, Canada goldenrod, sensitive fern, New York fern, evergreen wood fern	8" dark, mucky A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface		
T4R3	437	33	D				VP31CF_M		yellow birch, green ash, red maple, balsam fir, common woolsedge, common soft rush, greater bladder sedge	3-4" dark A horizon over depleted matrix with some organic mixing and 10% redox. concentrations at 8"	Soil saturated to the surface, 6" of standing water in ruts		
T4R3	438	33			D				short-tailed rush, common soft rush, nodding sedge, common woolsedge	Disturbed layer over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, wetland drainage patterns		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T4R3	439	33			D				common soft rush, cinnamon fern, fringed willow-herb, evergreen wood fern, pointed broom sedge	3-4" dark A horizon over mixed organic and depleted matrix with 10% redox. concentrations	Soil saturated to the surface, some small areas of inundation		
T4R3	440	33	D				VP121C F_M		yellow birch, red maple, balsam fir, greater bladder sedge, sensitive fern, cinnamon fern, fowl manna grass	4" dark A horizon over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, several natural ruts with 6" of standing water		
T4R3	441	33			D				balsam fir, long-beaked willow, nodding sedge, common soft rush, common wrinkle-leaved goldenrod, lance-leaved American-aster	Disturbed layer over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, areas of inundation		
T4R3	442	33			D				common woolsedge, balsam fir, long-beaked willow, nodding sedge, common soft rush, common wrinkle-leaved goldenrod, lance-leaved American-aster	Disturbed layer over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, areas of inundation		
T4R3	443	33			D				sensitive fern, interrupted fern, fowl manna grass, northern water-horehound, mad dog skullcap	Disturbed layer over depleted matrix with 15% redox. concentrations	Soil saturated to the surface, areas of inundation		
T4R3	444	33			D		VP32CF _M		common woolsedge, common soft rush, black-girdled woolsedge, fringed sedge	2-4" dark A horizon over compacted depleted matrix with 20% redox. concentrations	Soil saturated to the surface, some areas of inundation		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T4R3	445	33	D						red spruce, eastern hemlock, northern white-cedar, red maple, withered, pussy willow, three-seeded sedge, common woosedge, common wrinkle-leaved goldenrod	6-8" dark, mucky A horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface		
T4R3	446	34	D						yellow birch, black ash, balsam fir, red maple, fowl manna grass, cinnamon fern, sensitive fern, slender wood-reed	8-16" O horizon over depleted B horizon	Soil saturated to the surface, wetland drainage patterns		
T4R3	447	34	D						northern white-cedar, black ash, yellow birch, red spruce, speckled alder, cinnamon fern, crested wood fern, fowl manna grass	16+" O horizon	Soil saturated to the surface, wetland drainage patterns, areas of inundation		
T4R3	448	34	D						northern white-cedar, eastern hemlock, balsam fir, crested wood fern, three-seeded sedge, goldthread, interrupted fern	Organic material over a depleted matrix with redox. concentrations	Areas of inundation, soil saturated to the surface		
T4R3	449	34	D	x					balsam fir, northern white-cedar, yellow birch, red maple, Canada reed grass, three-seeded sedge, cinnamon fern, sensitive fern	3" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation		
T4R3	450	34		D					northern white-cedar, balsam fir, fringed sedge, common woosedge	Dark A horizon over a depleted matrix with redox. concentrations	Soil saturated, areas of inundation		
T4R3	451	34		D					balsam fir, northern white-cedar, three-seeded sedge	2" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
T4R3	452	34		D					balsam fir, northern white-cedar, eastern white pine	2" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation		
T4R3	453	34		D					northern white-cedar, balsam fir, fringed sedge, common wooldsedge	Dark A horizon over a depleted matrix with redox. concentrations	Soil saturated, areas of inundation		
T4R3	454	34	D						northern white-cedar, yellow birch, eastern hemlock, balsam fir, speckled alder, fowl manna grass, interrupted fern	Dark A horizon over a depleted matrix with redox. concentrations	Areas of inundation, soil saturated to the surface		
T4R3	455	34		D					northern white-cedar, balsam fir, three-seeded sedge, fringed sedge	3" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface		
T4R3	456	35	D						northern white-cedar, yellow birch, eastern hemlock, balsam fir, speckled alder, fowl manna grass, interrupted fern	Dark A horizon over a depleted matrix with redox. concentrations	Areas of inundation, soil saturated to the surface		
T4R3	457	35	D						northern white-cedar, yellow birch, eastern hemlock, balsam fir, speckled alder, fowl manna grass, interrupted fern	Dark A horizon over a depleted matrix with redox. concentrations	Areas of inundation, soil saturated to the surface		
T4R3	458	35	D					VP120C F_M	northern white-cedar, yellow birch, balsam fir, fringed sedge, sensitive fern, cinnamon fern	2" O horizon over depleted matrix with redox. concentrations	Soil saturated to the surface, areas of inundation		

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Wetland ID	Numbered Order	Resource Map #	Wetland Classification <sup>1</sup>				Stream <sup>2</sup>	Vernal Pool <sup>3</sup>	WSS <sup>4</sup>	Wetland Information			Notes
			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Lin	459	35		D	D		VP114C F_M, VP113C F_M		fowl manna grass, spotted touch-me-not, red maple, black ash, fringed willow-herb, cinnamon fern, Canada reed grass; needle spikesedge, nodding sedge, black-girdled woolsedge, common soft rush, sensitive fern	16+" organic muck, histosol	Soil super-saturated, free water at soil surface, sulfur smell, buttressed roots, areas with standing water; areas of inundation, wetland drainage patterns		
Lin	460	35			D				fringed sedge, broad-leaved cat-tail, red maple, fowl manna grass, common woolsedge, necklace sedge, fowl meadowgrass	O and A horizons removed, B horizon depleted with few but distinct redox. concentrations and depletions	Altered by ATV activity, soil saturated to the surface		
Lin	461	35			D				common woolsedge, common wrinkle-leaved goldenrod, broad-leaved cat-tail, nodding sedge, sensitive fern, cinnamon fern	6" O horizon over depleted matrix with 10% redox. concentrations	Soil saturated to the surface		
Lin	462	35			D				common woolsedge, common wrinkle-leaved goldenrod, sensitive fern, nodding sedge, red maple	8" dark A horizon over gleyed matrix	Soil saturated to the surface, areas of inundation		
Lin	463	35			D				common woolsedge, wrinkle-leaved goldenrod, fringed sedge, arrow-leaved tearthumb, sensitive fern, fringed willow-herb, coltsfoot	Soil disturbed, 3" mixed O horizon and A horizon over a depleted matrix with redox. concentrations and depletions	Soil saturated, one small area with standing water		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Lin	464	35	D	D					R	speckled alder, sensitive fern, bristly black currant, dwarf raspberry, common woolsedge, fowl manna grass, spotted touch-me-not, creeping snowberry, yellow birch, northern white-cedar, red maple, red spruce, cinnamon fern, nodding sedge, three-seeded sedge	4" organic over a gleyed matrix with redox. concentrations ; 16+" O horizon	Soil saturated, areas of inundation	
Lin	465	35	D	D						northern white-cedar, red spruce, balsam fir, three-seeded sedge, cinnamon fern, Fraser's St. John wort, red maple; 'black spruce, yellow birch, tall cottonsedge, black huckleberry, Labrador tea, round-leaved sundew, blue iris, purple pitcher plant	16+" organic soil material, histosol	Soil saturated to the surface, woody vegetation on mounds	
Lin	466	35	D						P	northern white-cedar, black spruce, red spruce, leatherleaf, Labrador tea, pitcher plant, three-leaved goldthread, common woolsedge	16+" organic soil material, histosol	Soil saturated to the surface, woody vegetation on mounds, floating mat of sphagnum	
Lin	467	35			D					common woolsedge, broad-leaved cat-tail, pointed broom sedge	Soil disturbed with 3" dark A horizon over mixed depletions and gleyed B horizon with 10% redox. concentrations	Standing water	

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Lin	468	36	D				VP111C F_M, VP112C F_M, VP110C F_M, VP109C F_M		northern white-cedar, pointed broom sedge, common soft rush, red spruce	13" O horizon over rock	Soil saturated to surface		
Lin	469	36		D					yellow birch, northern white-cedar, balsam fir, Canada reed grass, fringed sedge, cinnamon fern, sensitive fern, broad-leaved cat-tail, red maple, black ash, nodding sedge, pussy willow, common wrinkle-leaved goldenrod,	6" organic over 2" gleyed B horizon with redox. concentrations ; 16+" O horizon	Soil saturated to the surface, areas of inundation		
Lin	470	36		D					yellow birch, northern white-cedar, balsam fir, red maple, nodding sedge, common wrinkle-leaved goldenrod, evergreen wood fern, fowl manna grass, three-seeded sedge	16+" O horizon	Soil saturated to the surface, water stained leaves		
Lin	471	36	D						northern white cedar, sensitive fern, common woolsedge, bristly blackberry	13" O horizon over rock	Saturated to the surface, some standing water in ruts, water stained leaves		
Lin	472	36			D		VP108C F_M		yellow birch, northern water-plantain, broad-leaved cat-tail, common woolsedge, fringe sedge, sensitive fern	Soil disturbed with 3-6" dark A horizon over a depleted matrix with 5% redox. concentrations	Soil saturated to surface, 8" standing water		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Lin	473	37	D						green ash, balsam fir, red maple, eastern leatherwood, narrow lady fern, sensitive fern, fowl manna grass, eastern rough sedge, fiddlehead fern	8" organic over rock	Soil saturated in the upper 12", water stained leaves, wetland drainage patterns		
Oak	474	37			D				common woolsedge, eastern rough sedge, common soft rush, Canada goldenrod, mosquito bulrush	Dark A horizon and depleted soil with redox. concentrations just below the soil surface, top layers disturbed	Soil saturated to the surface, 2' standing water in ruts		
Oak	475	37			D				eastern rough sedge, common soft rush, fringed sedge, broad-leaved cat-tail, Canada goldenrod	4" dark A horizon over a depleted B horizon with many, coarse and prominent redox. features	4" standing water in ruts, wetland drainage patterns		
Oak	476	37			D				Canada goldenrod, common woolsedge, common soft rush, broad-leaved cat-tail, royal fern, interrupted fern, eastern rough sedge	Dark A horizon with many, coarse, prominent redox. features at 4"	Soil saturated to the surface		
Oak	477	37			D				fringed sedge, common woolsedge, fowl manna grass, common soft rush, cinnamon fern, long-beaked willow	7" dark Ap horizon over a depleted B horizon with redox. concentrations at 12"	Saturated in the upper 12", water stained leaves		

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			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydric Soil Indicators	Indicators of Wetland Hydrology	
Oak	478	37			D				Canada goldenrod, common woolsedge, common soft rush, broad-leaved cat-tail, royal fern, interrupted fern, eastern rough sedge	Dark A horizon with many, coarse, prominent redox. features at 4"	Soil saturated to the surface		
Oak	479	37	x		D				yellow birch, green ash, balsam fir, fowl manna grass, common woolsedge, interrupted fern, sensitive fern, cinnamon fern	11" O horizon over rock in most areas	Wetland drainage patterns, soil saturated to the surface, water stained leaves		
Oak	480	37	D		D				balsam fir, yellow birch, green ash, red maple, long-beaked willow, fringed sedge, broad-leaved cat-tail, royal fern, eastern rough sedge	5" O horizon over 4" dark A horizon over a depleted sandy B horizon with 5% redox. concentrations at 10"	Wetland drainage patterns, soil saturated to the surface, water stained leaves		
Oak	481	37	D				VP47-1DD_N, VP27SD_N		northern white-cedar, black ash, long beaked-willow, balsam fir, yellow birch, speckled alder, common woolsedge, cinnamon fern, three-seeded sedge, royal fern	24+" O horizon, histosol	Soil saturated to the surface, water stained leaves		
Oak	482	37			D				common woolsedge, wrinkle-leaf goldenrod, northeastern manna grass, common soft rush, nodding sedge, sensitive fern, tall-white American-aster, yellow birch, red maple	5" dark A horizon over a depleted B horizon with 10% redox. features at 7"	Wetland drainage patterns, soil saturated to the surface		

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**Table A-2. Oakfield II Waterbody Resource Table**

Stream ID	Associated Wetland ID	Map Number	Perennial or Intermittent	USGS Name	Width
STR01	CHE019, CHE020, CHE022	2	Perennial		3-8'
STR02	CHE022, CHE023	2	Perennial	Medunkeunk Stream	30-50'
STR03	CHE022, CHE023	2	Perennial	Medunkeunk Stream	30-50'
STR04	CHE058	4	Perennial		4-6'
STR05	CHE064	4	Perennial		2-4'
STR06	CHE068	4	Perennial	Ebhorse Stream	70-80'
STR07	WOO103	6	Perennial		3-5'
STR08	WOO139	9	Perennial	Eagle Stream	8-15'
STR09	WOO141	9	Perennial		4'
STR10	WOO153	10	Perennial	Penobscot River	250'
STR11	MAT156	10	Intermittent		1-2.5'
STR12	MAT159	10	Perennial		4.5'
STR13	MAT164, MAT165	11	Perennial	Mattaseunk Stream	20'
STR14	MOL173, MOL175, MOL176, MOL177	12	Perennial		18-22'
STR15	MOL187	12	Perennial		3-10'
STR16	MOL198	13	Perennial		2.5'
STR17	MOL198	13	Perennial		5'
STR18	MOL199	14	Intermittent		3-5'
STR19	-	14	Intermittent		2'
STR20	-	14	Intermittent		2'
STR21	MAC212	14	Intermittent		2'
STR22	MAC223	15	Perennial		4-6'
STR23	MAC223	15	Intermittent		3-5'
STR24	MAC230, MAC231	15	Perennial	Little Molunkus Stream	40'
STR25	-	16	Perennial	Molunkus Stream	100'
STR26	MAC245, MAC246, MAC247	17	Perennial	Arbo Brook	6-8'

Stream ID	Associated Wetland ID	Map Number	Perennial or Intermittent	USGS Name	Width
STR27	MAC251, MAC252	17	Perennial		5-6'
STR28	MAC258, MAC259	17	Perennial	Macwahoc Stream	80-250'
STR29	NYA278, NYA279	19	Intermittent		2-3'
STR30	-	21	Perennial	Wytopitlock Stream	30-40'
STR31	REE302	21	Perennial		3-6'
STR32	REE316	22	Perennial		2-6'
STR33	REE320	22	Perennial		4-8'
STR34	GLE327	23	Perennial	Smith Brook	35-40'
STR35	GLE345, GLE346	25	Perennial	Battle Brook	18-24'
STR36	GLE359	27	Perennial	Alder Brook	22-26'
STR37	GLE359	27	Perennial		3.5'
STR38	-	29	Perennial	West Branch Mattawamkeag River	65'
STR46	-	30	Intermittent		2-3'
STR39	T3R386	30	Perennial		6-8'
STR46	T3R395	30	Intermittent		2-3'
STR40	T3R399	31	Perennial	East Branch Mattawamkeag River	125'
STR41	T3R402	31	Perennial		6-8'
STR42	T3R403, T3R402	31	Perennial	Beaver Brook	25'
STR43	T3R403	31	Perennial		10'
STR44	LIN464	35	Intermittent		3'
STR45	LIN473	37	Intermittent		3-4'

**Table A-3: Wetlands Associated with Permanent Access Roads**

Road ID	Access Report Road ID	Stantec Wetland ID	Stantec Feature ID	Wetland Impact (sq-ft)	PFO	PS	PEM	PUB	Stream	VP	WoSS	Dominant Veg	Hydric Soil	Hydrology	Notes
AR-49-50	AR-50-3	CHE-036	CHE036	4,210	D	D	x					red spruce, black spruce, northern white-cedar, balsam fir, common winterberry, speckled alder, rhodora, sheep American-laurel, cinnamon fern; gray birch, white meadowsweet, Canada reed grass, fowl manna grass, three-seeded sedge, sensitive fern, with-rod, red maple, American larch	Histosol; areas of depleted B horizon with redoximorphic concentrations	Soil saturated to the surface, water stained leaves, free water at 1" below the surface, areas of inundation	
AR64-65 (5)							D					sallow sedge, fowl manna grass, common soft rush, yellow-green sedge, path rush, black-girdled woolsedge, spikesedge, broad-leaved cattail	Depleted B horizon at 1-2"	Soil saturated to the surface, areas of inundation, water-stained leaves	02BEL/02BEM

Road ID	Access Report Road ID	Stantec Wetland ID	Stantec Feature ID	Wetland Impact (sq-ft)	PFO	PS S	PEM	PUB	Stream	VP	WoSS	Dominant Veg	Hydric Soil	Hydrology	Notes
AR-120-121	AR-70	02ben	40	3,805			D					barber-pole bulrush, common soft rush, yellow-green sedge, royal fern, willow, pink meadowsweet, common cat-tail, common woolsedge, drooping sedge	Depleted B horizon at 5-6"	Soil saturated to the surface	
AR-152-153					D	x						balsam fir, yellow birch, gray birch, eastern hemlock, broad-leaved cat-tail, manna grass, sedge, common woolsedge	Depleted B horizon	Soil saturated to the surface, areas of inundation	Winter Delineation: 06BEA/06BEB
AR-120-121	AR-70	02beo	39	885			D					barber-pole bulrush, sensitive fern, royal fern, common woolsedge	Depleted B horizon at 6"	Soil saturated to the surface, standing water in pits	
AR-120-121	AR-70	02beo	38	2,980			D					barber-pole bulrush, sensitive fern, royal fern, common woolsedge	Depleted B horizon at 6"	Soil saturated to the surface, standing water in pits	
AR-162-163	AR-100-EXT	02ber	36	2,385		x	D					common woolsedge, white meadowsweet, willow, grey birch			
AR-196-197	AR-110-2-EXT	06bec		1,925	D							yellow birch, red maple, eastern hemlock, common woolsedge, sedge, goldenrod	Depleted B horizon at 2"	Soil saturated to the surface, areas of standing water	Winter delineation 06BEC.

Road ID	Access Report Road ID	Stantec Wetland ID	Stantec Feature ID	Wetland Impact (sq-ft)	PFO	PS S	PEM	PUB	Stream	VP	WoSS	Dominant Veg	Hydric Soil	Hydrology	Notes
AR-162-163	AR-100-EXT	02beq	37	1,000			D					common woolsedge, barber-pole bulrush, grey birch, willow	Depleted matrix at 2-4" with redoximorphic concentrations and depletions	Soil saturated to the surface, water marks, areas of inundation	Forested wetland off-site
AR-162-163	AR-100-EXT	02bes	35	3,860		x	D					white meadowsweet, grey birch, pink meadowsweet, common woolsedge, Canada reed grass, goldenrod	Depleted matrix at 4"	Soil saturated within 3-4"	In the MEPCO corridor
AR-240-241	AR-130/130-EXT	02beu	33	3,670			D					spikesedge, barber-pole bulrush, common woolsedge, common cat-tail, pink meadowsweet, pussy willow	Depleted B horizon at 2-3", soil compacted	Water stains and surface cracks	In road
AR-246-247	AR-140	02bev	32	360			D					common woolsedge, barber-pole bulrush, common soft rush, mosquito bulrush, pink meadowsweet	Depleted B horizon with redoximorphic concentrations at 3"	Water stains	In and adjacent to road
AR-246-247	AR-140	02bew	31	550			D			VP18B E_M		common woolsedge, mosquito bulrush, goldenrod, drooping sedge	Depleted B horizon with redoximorphic concentrations at 3"	Water stains	In and adjacent to road
AR-246-247	AR-140	02bex	30	970			D			VP17B E_M		mosquito bulrush, common woolsedge, drooping sedge, sensitive fern	Depleted B horizon at 8" with redoximorphic concentrations	Soil saturated to the surface, water marks, evidence of recent inundation	

Road ID	Access Report Road ID	Stantec Wetland ID	Stantec Feature ID	Wetland Impact (sq-ft)	PFO	PS S	PEM	PUB	Stream	VP	WoSS	Dominant Veg	Hydric Soil	Hydrology	Notes
AR-246-247	AR-140	02bey	29	1,325			D					common reed, barber-pole bulrush, common woolsedge, mosquito bulrush, common soft rush, sensitive fern, yellow-green sedge, sallow sedge, drooping sedge, common cat-tail	Depleted B horizon at 2" with redoximorphic concentrations. Areas with 3-6" organic material over a depleted B horizon	Areas inundated, soil saturated to the surface, wetland drainage patterns	
AR-246-247	AR-140	02bez	28	4,300			D					yellow-green sedge, barber-pole bulrush, common woolsedge, Canada reed grass, sallow sedge, goldenrod	Depleted B horizon at 3-6" with redoximorphic concentrations	Soil saturated to the surface, areas on inundation	In MEPCO Corridor
AR-260-261	AR-170/170-EXT	03beb	26	1,475		D				SVP19 BE_N		common woolsedge, Canada reed grass, red maple, speckled alder, silky dogwood, quaking aspen	Depleted B horizon	Water stained leaves	Man-made pool, impounded by road
AR-260-261	AR-170/170-EXT	03bea	27	450			D					common woolsedge, sensitive fern, pussy willow	Depleted B horizon at 8"	Soil saturated at 4"	
AR-318-319	AR-210-EXT	b3bec	25	1,360			D					common woolsedge, common soft rush, sallow sedge, goldenrod, sensitive fern, spotted touch-me-not			

Road ID	Access Report Road ID	Stantec Wetland ID	Stantec Feature ID	Wetland Impact (sq-ft)	PFO	PS S	PEM	PUB	Stream	VP	WoSS	Dominant Veg	Hydric Soil	Hydrology	Notes
AR-324-325	AR-220	03bed	24	1,005			D					common woolsedge, grass-leaved goldenrod, drooping sedge, horsetail, spikesedge, willow, speckled alder	Depleted B horizon at 3"	Water stains	Extends as PFO on either side of road--outside corridor
AR-324-325	AR-220	03bee	23	3,030	D		D					northern white-cedar, balsam fir, red maple, red raspberry, white meadowsweet, common woolsedge, sensitive fern	Histic Epipedon: 10-12" organic material over a depleted matrix with redoximorphic concentrations	no data	
AR-350-351	AR-248	03bek	17	4,265			D	D				drooping sedge, sensitive fern, common woolsedge, yellow birch, red maple	Depleted B horizon at 4"	Soil saturated within 12", water stains	
AR-350-351	AR-248	03bel	16	135				D				common woolsedge, common cat-tail, drooping sedge, fallow sedge, fowl manna grass, pink meadowsweet, speckled alder, grey birch	Depleted B horizon	Water stains	Adjacent to Route 2a and access road
AR-353-354	AR-250	03bem	15	4,455				D				Reed canary grass, common woolsedge, common cat-tail, willow, pink meadowsweet	Depleted B horizon	Water stains	In road
AR-353-354	AR-250	03ben	14	807				D				common woolsedge, common cat-tail, yellow-green sedge, pink meadowsweet	Depleted B horizon	Water stains	In road

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AR-386-387	AR-290-1	03bep	56	740			D					common soft rush, common woolsedge, spikesedge, mosquito bulrush, drooping sedge	Depleted B horizon at 4" with redoximorphic concentrations	Water stains	
AR-386-387	AR-290-1	03beo	57	600			D					common woolsedge, drooping sedge, spotted touch-me-not, mosquito bulrush, goldenrod	Depleted B horizon at 3" with redoximorphic concentrations and depletions	Water stains	In road. Extends outside corridor as PFO
AR-386-387	AR-290-1	03beq	55	900			D					common woolsedge, drooping sedge, goldenrod, fowl manna grass	Depleted B horizon	Areas of inundation, soil saturated to the surface	Extends off site as PFO
AR-388-389	AR-290-2	REE302	REE302	5,870	D				STR31		R	northern white-cedar, red spruce, balsam fir, yellow birch, cinnamon fern, three-seeded sedge	10-12" O horizon over gleyed matrix	Soil saturated to the surface, areas of inundation	stream: STR31
AR-399-400	AR-300	REE309	REE309	1,900	D					VP51A A_M VP20B E_M		red maple, balsam fir, northern white-cedar, sensitive fern, fringed sedge, dwarf raspberry, northern water-horehound	2" O horizon over 1" A horizon over depleted B horizon with redoximorphic concentrations	Soil saturated to the surface, water stained leaves, areas of inundation	
AR-421-422	AR-320	04bed	6	9,365		D	D			VP21B E_M, VP22B E_M		speckled alder, white meadow sweet, red maple, barber-pole bulrush, broom sedge, common soft rush, drooping sedge	Depleted B horizon at 6"	Soil saturated within 6", areas of inundation	pool origin unknown

Road ID	Access Report Road ID	Stantec Wetland ID	Stantec Feature ID	Wetland Impact (sq-ft)	PFO	PS S	PEM	PUB	Stream	VP	WoSS	Dominant Veg	Hydric Soil	Hydrology	Notes
AR-421-422	AR-320	04bec	7	100		D						speckled alder, sensitive fern	Depleted B horizon	Soil saturated to the surface	
AR-425-426	AR-330	04beh	2	730			D					three seeded sedge, sensitive fern, white meadowsweet	Depleted B horizon with redoximorphic concentrations and depletions at 3"	Soil saturated within 12", water stains	
AR-425-426	AR-330	04bei	1	1,525			D					drooping sedge, Canada reed grass, sensitive fern, fowl manna grass, pink meadowsweet	Depleted B horizon with redoximorphic concentrations and depletions at 4-6"	Water stains, soil saturated to the surface	
AR-521-522	AR-370-ALT-1	GLE364	GLE364	2,275	D					VP66A A_M		northern white-cedar, black ash, green ash, quaking poplar, balsam fir, yellow birch, cinnamon fern, fowl manna grass, sensitive fern	6-10" O/A horizon over depleted matrix with redoximorphic features	Soil saturated to the surface, areas of inundation	
AR-597-598	AR-400-1-EXT	08mgx	44	810		D						northern white-cedar, yellow birch, balsam fir, green ash, sensitive fern, woodland horsetail, common woosedge, spotted touch-me-not	3" organic material over a depleted matrix with many coarse distinct redoximorphic concentrations at 3"	Soil saturated to the surface	
AR-620-621	AR-400-2-EXT	08mgw	45	365			D					spotted touch-me-not, drooping sedge	Mucky A horizon over a depleted B horizon	Water staining	
AR-648-649	AR-410-EXT	04bej	13	270			D					drooping sedge, common woosedge, mosquito bulrush	Depleted matrix at 8" with redoximorphic concentrations and depletions	Areas of inundation (the road), soil saturated within 12"	

Road ID	Access Report Road ID	Stantec Wetland ID	Stantec Feature ID	Wetland Impact (sq-ft)	PFO	PS S	PEM	PUB	Stream	VP	WoSS	Dominant Veg	Hydric Soil	Hydrology	Notes
AR-648-649	AR-410-EXT	04bek	12	210			D					common woolsedge, common cat-tail, mosquito bulrush	4-6" organic material over a depleted matrix with redoximorphic concentrations. Evidence of mixing and disturbance	Soil saturated within 6"	Does not extend to road, but extends into large scrub-shrub wetland to the north
AR-648-649	AR-410-EXT	04bel	11	1,280			D					common woolsedge, drooping sedge, broom sedge, spikesedge, mosquito bulrush	Depleted B horizon at the surface, with redoximorphic concentrations	Soil saturated to the surface and within 6"	Extends north into a large scrub-shrub wetland
AR-656-657	AR-410-2	04bem	10	765			D					common woolsedge, common cat-tail, drooping sedge	Histosol	Areas of inundation, soil saturated to the surface	ditch
AR-656-657	AR-410-2	04ben	9	9,540			D			VP23B E_M, VP24B E_M		speckled alder, northern white-cedar, common cat-tail, common woolsedge, cotton-grass, sphagnum mats, aquatic plant with red berries that looks like pickerelweed	Histosol	Areas of inundation, soil saturated to the surface	large wetland complex with sphagnum mats and standing dead trees. Man-made PVP in old road

**Appendix B**  
**U.S. Army Corps of Engineers Wetland Delineation Data Forms**

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: ? Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 01DKZ  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                         Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. Acer saccharum	40%	Yes	FACU	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  Total Number of Dominant Species Across All Strata: 5 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)	
2. Tsuga canadensis	70%	Yes	FACU		
3. Fraxinus americana	10%	No	FACU		
4. Thuja occidentalis	10%	No	FACW		
5. Betula alleghaniensis	25%	No	FAC		
6.					
7.					
	155%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B)  Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. Tsuga canadensis	5%	Yes	FACU		
2. Viburnum lantanoides	2%	No	FAC		
3.					
4.					
5.					
6.					
7.					
	7%	= Total Cover			
<b>Herb Stratum</b> (Plot size: 5')					
1. Dryopteris intermedia	5%	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. Acer pensylvanicum	5%	Yes	FACU		
3. Trientalis borealis	2%	No	FAC		
4. Medeola virginiana	5%	No	-		
5. Clintonia borealis	2%	No	FAC		
6. Oxalis montana	3%	No	FAC		
7.					
8.					
9.					
10.					
11.					
12.					
	22%	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.				<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
2.					
3.					
4.					
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC.  
 Investigator(s): DMD, ATA  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: ?  
 State: ME  
 Section, Township, Range:  
 Local relief (concave, convex, none):  
 Long:                              Datum:  
 NWI Classification:

Sampling Date: 05/18/2010  
 Sampling Point: 01MJZ

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?      (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)                      <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> High Water Table (A2)                <input type="checkbox"/> Aquatic Fauna (B13)  <input type="checkbox"/> Saturation (A3)                            <input type="checkbox"/> Marl Deposits (B15)  <input type="checkbox"/> Water Marks (B1)                        <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Sediment Deposits (B2)                <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Drift Deposits (B3)                      <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Algal Mat or Crust (B4)                 <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Iron Deposits (B5)                        <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)    <input type="checkbox"/> Other (Explain in Remarks)  <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)  <input type="checkbox"/> Drainage Patterns (B10)  <input type="checkbox"/> Moss Trim Lines (B16)  <input type="checkbox"/> Dry-Season Water Table (C2)  <input type="checkbox"/> Crayfish Burrows (C8)  <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  <input type="checkbox"/> Stunted or Stressed Plants (D1)  <input type="checkbox"/> Geomorphic Position (D2)  <input type="checkbox"/> Shallow Aquitard (D3)  <input type="checkbox"/> Microtopographic Relief (D4)  <input type="checkbox"/> FAC-Neutral Test (D5)</p>
<p><b>Field Observations:</b></p> <p>Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):                  Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):                  Saturation Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):                  (includes capillary fringe)</p>	<p><b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b></p>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. <i>Abies balsamea</i>	20%	No	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 5 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)	
2. <i>Tsuga canadensis</i>	60%	Yes	FACU		
3. <i>Thuja occidentalis</i>	10%	No	FACW		
4. <i>Betula alleghaniensis</i>	30%	Yes	FAC		
5. <i>Acer rubrum</i>	10%	No	FAC		
6.					
7.					
	130%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B) Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. <i>Abies balsamea</i>	40%	Yes	FAC		
2. <i>Tsuga canadensis</i>	20%	Yes	FACU		
3. <i>Betula alleghaniensis</i>	20%	Yes	FAC		
4.					
5.					
6.					
7.					
	80%	= Total Cover			
<b>Herb Stratum</b> (Plot size: 5')					
1.				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
		= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.				<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
2.					
3.					
4.					
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: ? Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 01DKZ  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. <i>Betula alleghaniensis</i>	70%	Yes	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 4 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)	
2. <i>Tsuga canadensis</i>	10%	No	FACU		
3. <i>Thuja occidentalis</i>	dead	No	FACW		
4.					
5.					
6.					
7.					
	80%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B)  Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. <i>Acer spicatum</i>	70%	Yes	FACU		
2. <i>Salix bebbiana</i>	10%	No	FACW		
3. <i>Alnus incana</i> ssp. <i>rugosa</i>	10%	No	FACW		
4. <i>Betula alleghaniensis</i>	20%	No	FAC		
5. <i>Abies balsamea</i>	5%	No	FAC		
6.					
7.					
	115%	= Total Cover			
<b>Herb Stratum</b> (Plot size: 5')					
1. <i>Onoclea sensibilis</i>	10%	No	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <i>Rubus pubescens</i>	20%	Yes	FACW		
3. <i>Thuja occidentalis</i>	5%	No	FACW		
4. <i>Symphyotrichum novae-angliae</i>	5%	No	FACW		
5. <i>Chrysosplenium americanum</i>	20%	Yes	OBL		
6. <i>Athyrium filix-femina</i>	10%	No	FAC		
7. <i>Impatiens capensis</i>	10%	No	FACW		
8. <i>Glyceria melicaria</i>	10%	No	OBL		
9. <i>Matteuccia struthiopteris</i>	5%	No	FACW		
10. <i>Cardamine pensylvanica</i>	5%	No	OBL		
11. <i>Geum rivale</i>	3%	No	OBL		
12.					
	103%	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.				<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
2.					
3.					
4.					
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: ? Sampling Date: 05/18/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 01MJZ  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (Inches): Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	







**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. <i>Betula alleghaniensis</i>	30%	Yes	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)	
2. <i>Acer rubrum</i>	20%	Yes	FAC		
3. <i>Thuja occidentalis</i>	15%	Yes	FACW		
4. <i>Tsuga canadensis</i>	10%	No	FACU		
5.					
6.					
7.					
	75%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B)  Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. <i>Acer pensylvanicum</i>	50%	Yes	FACU		
2. <i>Picea rubens</i>	30%	Yes	FACU		
3. <i>Betula alleghaniensis</i>	20%	No	FAC		
4. <i>Abies balsamea</i>	20%	No	FAC		
5. <i>Acer rubrum</i>	5%	No	FAC		
6.					
7.					
	125%	= Total Cover			
<b>Herb Stratum</b> (Plot size: 5')					
1. <i>Equisetum sylvaticum</i>	15%	Yes	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <i>Trientalis borealis</i>	10%	No	FAC		
3. <i>Clintonia borealis</i>	10%	No	FAC		
4. <i>Acer rubrum</i>	10%	No	FAC		
5. <i>Trillium undulatum</i>	5%	No	FACU		
6. <i>Trillium erectum</i>	5%	No	FACU		
7.					
8.					
9.					
10.					
11.					
12.					
	55%	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.				<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
2.					
3.					
4.					
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC.  
 Investigator(s): ETD, ATA  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: Aroostook County  
 State: ME  
 Section, Township, Range: T4 R3 WELS  
 Local relief (concave, convex, none):  
 Long:                              Datum:  
 NWI Classification:

Sampling Date: 05/11/2010  
 Sampling Point: 21AAE

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?      (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area                  Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b>  <u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input checked="" type="checkbox"/> Surface Water (A1)                      <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> High Water Table (A2)                      <input checked="" type="checkbox"/> Aquatic Fauna (B13)  <input checked="" type="checkbox"/> Saturation (A3)                              <input type="checkbox"/> Marl Deposits (B15)  <input type="checkbox"/> Water Marks (B1)                              <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Sediment Deposits (B2)                      <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Drift Deposits (B3)                              <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Algal Mat or Crust (B4)                              <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Iron Deposits (B5)                              <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)      <input type="checkbox"/> Other (Explain in Remarks)  <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)  <input type="checkbox"/> Drainage Patterns (B10)  <input type="checkbox"/> Moss Trim Lines (B16)  <input type="checkbox"/> Dry-Season Water Table (C2)  <input type="checkbox"/> Crayfish Burrows (C8)  <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  <input type="checkbox"/> Stunted or Stressed Plants (D1)  <input type="checkbox"/> Geomorphic Position (D2)  <input type="checkbox"/> Shallow Aquitard (D3)  <input type="checkbox"/> Microtopographic Relief (D4)  <input type="checkbox"/> FAC-Neutral Test (D5)</p>
<p><b>Field Observations:</b></p> <p>Surface Water Present?                      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches):                  Water Table Present?                      Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (Inches):                  Saturation Present?                          Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches):                  (includes capillary fringe)</p>	<p><b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b></p>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')																				
1. <i>Abies balsamea</i>	30%	Yes	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)  Total Number of Dominant Species Across All Strata: 5 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)																
2. <i>Tsuga canadensis</i>	15%	No	FACU																	
3. <i>Thuja occidentalis</i>	15%	No	FACW																	
4. <i>Betula alleghaniensis</i>	15%	No	FAC																	
5. <i>Fraxinus nigra</i>	10%	No	FACW																	
6.																				
7.																				
	85%	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. <i>Abies balsamea</i>	30%	Yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Picea rubens</i>	20%	Yes	FACU																	
3. <i>Betula alleghaniensis</i>	20%	Yes	FAC																	
4. <i>Thuja occidentalis</i>	10%	No	FACW																	
5. <i>Acer rubrum</i>	10%	No	FAC																	
6.																				
7.																				
	90%	= Total Cover																		
<b>Herb Stratum</b> (Plot size: 5')																				
1. <i>Equisetum sylvaticum</i>	20%	Yes	FACW	<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.  <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. <i>Onoclea sensibilis</i>	10%	No	FACW																	
3. <i>Rubus pubescens</i>	10%	No	FACW																	
4. <i>Osmunda cinnamomea</i>	10%	No	FACW																	
5. <i>Carex trisperma</i>	5%	No	OBL																	
6. <i>Cornus canadensis</i>	5%	No	FAC																	
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	60%	= Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Chester / Penobscot Sampling Date: 05/10/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 08TTM  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	





## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC  
 Investigator(s): CWF, SB  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: Chester / Penobscot  
 State: ME  
 Section, Township, Range:  
 Local relief (concave, convex, none):  
 Long:                              Datum:  
 NWI Classification:

Sampling Date: 05/10/2010  
 Sampling Point: 08TTM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?      (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 8 Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	





## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Chester / Penobscot Sampling Date: 05/10/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 08MJY  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)		<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. <i>Abies balsamea</i>	60%	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	5 (A)
2. <i>Acer rubrum</i>	27%	Yes	FAC	Total Number of Dominant Species Across All Strata:	5 (B)
3. <i>Betula populifolia</i>	7%	No	FAC	Percent of Dominant Species That Are OBL, FACW, or FAC:	100% (A/B)
4. <i>Thuja occidentalis</i>	7%	No	FACW		
5.					
6.					
7.					
	101%	= Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: 15')				<b>Prevalence Index worksheet:</b>	
1. <i>Acer rubrum</i>	20%	Yes	FAC	<u>Total % Cover of:</u>	<u>Multiply by:</u>
2. <i>Betula populifolia</i>	10%	No	FAC	OBL Species	x 1 =
3. <i>Abies balsamea</i>	40%	Yes	FAC	FACW Species	x 2 =
4. <i>Alnus rugosa</i>	1%	No	FACW	FAC Species	x 3 =
5.				FACU Species	x 4 =
6.				UPL species	x 5 =
7.				Column Totals	(A) (B)
				Prevalence Index = B/A =	
	71%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b>	
				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				<b>Definitions of Vegetation Strata:</b>	
				<b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.	
				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
	43%	= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<u>Woody Vine Stratum</u> (Plot size: )					
1.					
2.					
3.					
4.					
				= Total Cover	
Remarks (Include photo numbers here or on a separate sheet.):					

**SOIL**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):								
Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
1-0								<b>organic</b>
0-1	10yr 5/3	100%					silt-loam	
1-17+	2.5y 6/4	100%					silt-loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F7)
- Depleted Dark Surface (F6)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR, K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149 B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type:  
Depth (inches):

Hydric Soil Present? Yes  No

**Remarks:**

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind City/County: Chester / Penobscot Sampling Date: 05/10/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 08MJY  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 2 Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 10 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)</p> <p>Total Number of Dominant Species Across All Strata: 5 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td>x 1 =</td> </tr> <tr> <td>FACW Species</td> <td>x 2 =</td> </tr> <tr> <td>FAC Species</td> <td>x 3 =</td> </tr> <tr> <td>FACU Species</td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> </tr> <tr> <td>Column Totals (A)</td> <td>(B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals (A)	(B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals (A)	(B)																			
Prevalence Index = B/A =																				
1. <i>Abies balsamea</i>	50%	Yes	FAC																	
2. <i>Acer rubrum</i>	33%	Yes	FAC																	
3. <i>Fraxinus pennsylvanica</i>	17%	No	FACW																	
4.																				
5.																				
6.																				
7.																				
	100%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. <i>Alnus rugosa</i>	80%	Yes	FACW																	
2. <i>Acer rubrum</i>	5%	No	FAC																	
3.																				
4.																				
5.																				
6.																				
7.																				
	85%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. <i>Onoclea sensibilis</i>	15%	No	FACW																	
2. <i>Calamagrostis canadensis</i>	50%	Yes	FACW																	
3. <i>Impatiens capensis</i>	25%	No	FACW																	
4. <i>Ribes glandulosum</i>	40%	Yes	FACW																	
5. <i>Clematis virginiana</i>	15%	No	FAC																	
6. <i>Galium trifidum</i>	2%	No	FACW																	
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	147%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size:      )																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind City/County: Chester / Penobscot Sampling Date: 05/10/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 09MJU  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> Water-Stained Leaves (B9)</td> </tr> <tr> <td><input type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Aquatic Fauna (B13)</td> </tr> <tr> <td><input type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Marl Deposits (B15)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<p><u>Secondary Indicators (minimum of two required)</u></p> <table style="width:100%;"> <tr><td><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td><input type="checkbox"/> Dry-Season Water Table (C2)</td></tr> <tr><td><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td><input type="checkbox"/> FAC-Neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)																															
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<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)																															
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)																															
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)																																
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<input type="checkbox"/> Microtopographic Relief (D4)																																
<input type="checkbox"/> FAC-Neutral Test (D5)																																
<p><b>Field Observations:</b></p> <table style="width:100%;"> <tr> <td>Surface Water Present?</td> <td>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> <td>Depth (Inches):</td> </tr> <tr> <td>Water Table Present?</td> <td>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> <td>Depth (Inches):</td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> <td>Depth (Inches):</td> </tr> </table>	Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	<p><b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b></p>																						
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):																														
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):																														
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):																														
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																
Remarks:																																

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>
1. <i>Abies balsamea</i>	60%	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)
2. <i>Pinus strobus</i>	27%	Yes	FACU	
3. <i>Picea rubens</i>	13%	No	FACU	
4.				
5.				
6.				
7.				
	100%	= Total Cover		<b>Prevalence Index worksheet:</b>  <u>Total % Cover of:</u> <u>Multiply by:</u> OBL Species                                      x 1 = FACW Species                                      x 2 = FAC Species                                        x 3 = FACU Species                                      x 4 = UPL species                                        x 5 = Column Totals                                      (A)                                      (B)  Prevalence Index = B/A =
<u>Sapling/Shrub Stratum</u> (Plot size: 15')				
1. <i>Abies balsamea</i>	30%	Yes	FAC	
2. <i>Viburnum cassinoides</i>	2%	No	FACW	
3. <i>Lonicera canadensis</i>	2%	No	FACU	
4.				
5.				
6.				
7.				
	34%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Herb Stratum</u> (Plot size: 5')				
1. <i>Maianthemum canadense</i>	10%	Yes	FAC	
2. <i>Trientalis borealis</i>	5%	Yes	FAC	
3. <i>Aralia nudicaulis</i>	5%	Yes	FACU	
4. <i>Acer rubrum</i>	1%	No	FAC	
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	21%	= Total Cover		<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
<u>Woody Vine Stratum</u> (Plot size:        )				
1.				
2.				
3.				
4.				
		= Total Cover		
Remarks (Include photo numbers here or on a separate sheet.):				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Chester / Penobscot Sampling Date: 05/10/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 09MJU  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 4 Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: NWI wetland		





## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Glenwood Plt. / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 01BEQ  
 Investigator(s): ETD, SRB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                          Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')																				
1. <i>Tsuga canadensis</i>	15%	Yes	FACU	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)																
2. <i>Abies balsamea</i>	5%	Yes	FAC																	
3.																				
4.																				
5.																				
6.																				
7.																				
	20%	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. <i>Acer rubrum</i>	45%	Yes	FAC																	
2. <i>Abies balsamea</i>	25%	Yes	FAC																	
3. <i>Thuja occidentalis</i>	15%	No	FACW																	
4. <i>Betula alleghaniensis</i>	5%	No	FAC																	
5. <i>Amelanchier laevis</i>	5%	No	-																	
6. <i>Prunus virginiana</i>	5%	No	FACU																	
7.																				
	100%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
<b>Herb Stratum</b> (Plot size: 5')																				
1. <i>Carex crinida</i>	20%	Yes	OBL																	
2. <i>Solidago rugosa</i>	20%	Yes	FAC																	
3. <i>Dennstaedtia punctilobula</i>	35%	No	-																	
4. <i>Polystichum acrostichoides</i>	5%	No	FACU																	
5. <i>Maianthemum canadense</i>	3%	No	FAC																	
6. <i>Fragaria virginiana</i>	5%	No	FACU																	
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	88%	= Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.				<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
2.																				
3.																				
4.																				
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
Remarks (Include photo numbers here or on a separate sheet.):																				





**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: 30')				<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 3 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
1.				
2.				
3.				
4.				
5.				
6.				
7.				<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B) Prevalence Index = B/A =
= Total Cover				
<b>Sapling/Shrub Stratum</b> (Plot size: 15')				
1. Acer rubrum	30%	Yes	FAC	
2. Abies balsamea	30%	Yes	FAC	
3. Betula alleghaniensis	15%	No	FAC	
4. Corylus cornuta	10%	No	FACU	
5.				
6.				
7.				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
85% = Total Cover				
<b>Herb Stratum</b> (Plot size: 5')				
1. Carex stipata	10%	No	OBL	
2. Carex crinita	25%	Yes	OBL	
3. Euthamia graminifolia	15%	No	FAC	
4. Symphyotrichum puniceum	10%	No	OBL	
5. Equisetum sylvaticum	15%	No	FACW	
6. Fragaria virginiana	10%	No	FACU	
7. Carex leptalea	10%	No	OBL	
8.				<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
95% = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: 30')				
1.				
2.				
3.				
4.				
= Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks (Include photo numbers here or on a separate sheet.):				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC.  
 Investigator(s): ETD, SRB  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: Glenwood Plt. / Aroostook      Sampling Date: 05/17/2010  
 State: ME                      Sampling Point: 12DDX  
 Section, Township, Range:  
 Local relief (concave, convex, none):  
 Long:                                  Datum:  
 NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?      (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p><b>Field Observations:</b></p> Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<p><b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b></p>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</p> <p>Total Number of Dominant Species Across All Strata: 6 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals (A)</td> <td style="text-align: right;">(B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals (A)	(B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals (A)	(B)																			
Prevalence Index = B/A =																				
1. <i>Abies balsamea</i>	30%	Yes	FAC																	
2. <i>Thuja occidentalis</i>	15%	Yes	FACW																	
3. <i>Fraxinus nigra</i>	5%	No	FACW																	
4.																				
5.																				
6.																				
7.																				
	50%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. <i>Abies balsamea</i>	20%	Yes	FAC																	
2. <i>Acer pensylvanicum</i>	15%	Yes	FACU																	
3. <i>Corylus cornuta</i>	15%	Yes	FACU																	
4. <i>Acer spicatum</i>	10%	No	FACU																	
5. <i>Acer rubrum</i>	5%	No	FAC																	
6.																				
7.																				
	65%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. <i>Gymnocarpium dryopteris</i>	25%	Yes	UPL																	
2. <i>Fragaria virginiana</i>	5%	No	FACU																	
3. <i>Maianthemum canadense</i>	5%	No	FAC																	
4. <i>Oxalis montana</i>	5%	No	FAC																	
5. <i>Tridentalis borealis</i>	3%	No	FAC																	
6. <i>Solidago rugosa</i>	2%	No	FAC																	
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	45%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Glenwood Plt. / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 12DDX  
 Investigator(s): ETD, SRB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 1 Saturation Present?                            Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')																				
1. <i>Abies balsamea</i>	40%	Yes	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)  Total Number of Dominant Species Across All Strata: 7 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (A/B)																
2. <i>Tsuga canadensis</i>	25%	Yes	FACU																	
3. <i>Fraxinus nigra</i>	15%	No	FACW																	
4.																				
5.																				
6.																				
7.																				
	80%	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. <i>Abies balsamea</i>	35%	Yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Ostrya virginiana</i>	15%	Yes	FACU																	
3. <i>Corylus cornuta</i>	15%	Yes	FACU																	
4. <i>Acer spicatum</i>	10%	No	FACU																	
5.																				
6.																				
7.																				
	75%	= Total Cover																		
<b>Herb Stratum</b> (Plot size: 5')																				
1. <i>Athyrium filix-femina</i> var. <i>angustum</i>	20%	Yes	FAC	<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.  <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. <i>Thelypteris noveboracensis</i>	15%	Yes	FAC																	
3. <i>Rubus pubescens</i>	10%	No	FACW																	
4. <i>Carex crinita</i>	5%	No	FACW																	
5. <i>Oclemena acutimanata</i>	2%	No	-																	
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	52%	= Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind City/County: Linneus / Aroostook Sampling Date: 05/20/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 02RLB  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks (Explain alternative procedures here or in a separate report):			

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):	Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):	(includes capillary fringe)	
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. Thuja occidentalis	15%	No	FACW	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)	
2. Betula alleghaniensis	10%	No	FAC		
3. Abies balsamea	30%	Yes	FAC		
4. Acer rubrum	30%	Yes	FAC		
5.					
6.					
7.					
	85%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B)  Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. Abies balsamea	30%	Yes	FAC		
2. Tsuga canadensis	40%	Yes	FACU		
3. Acer rubrum	20%	Yes	FAC		
4.					
5.					
6.					
7.					
	90%	= Total Cover			
<b>Herb Stratum</b> (Plot size: 5')					
1. Aralia nudicaulis	10%	No	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. Trientalis borealis	2%	No	FAC		
3. Trillium undulatum	3%	No	FACU		
4. Linnaea borealis ssp. longiflora	10%	No	FAC		
5. Viburnum nudum var. cassinoides	5%	No	FACW		
6. Maianthemum canadense	20%	Yes	FAC		
7. Abies balsamea	2%	No	FAC		
8.					
9.					
10.					
11.					
12.					
	52%	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.				<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
2.					
3.					
4.					
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Linneus / Aroostook Sampling Date: 05/20/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 02RLB  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface Saturation Present?                            Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)</p> <p>Total Number of Dominant Species Across All Strata: 6 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. Thuja occidentalis	5%	Yes	FACW																	
2. Picea mariana	5%	Yes	FACW																	
3.																				
4.																				
5.																				
6.																				
7.																				
	10%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Picea mariana	30%	Yes	FACW																	
2. Thuja occidentalis	10%	No	FACW																	
3. Viburnum nudum var. cassinoides	5%	No	FACW																	
4. Ilex verticillata	30%	Yes	FACW																	
5. Rhododendron groenlandicum	20%	No	OBL																	
6. Acer rubrum	30%	Yes	FAC																	
7. Kalmia angustifolia	10%	No	FAC																	
	135%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Carex trisperma	80%	Yes	OBL																	
2. Eriophorum ssp.	20%	No	-																	
3. Kalmia angustifolia	5%	No	FAC																	
4. Rhododendron groenlandicum	5%	No	OBL																	
5. Acer rubrum	5%	No	FAC																	
6. Maianthemum canadense	15%	No	FAC																	
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	130%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Macwahoc Plt / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 08SMQ  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                           Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																			
<b>Tree Stratum</b> (Plot size: 30')																						
1. Acer saccharum	30%	Yes	FACU	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 5 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)																		
2. Acer rubrum	30%	Yes	FAC																			
3. Betula papyrifera	10%	No	FACU																			
4. Betula alleghaniensis	40%	Yes	FAC																			
5. Fraxinus americana	10%	No	FACU																			
6. Abies balsamea	5%	No	FAC																			
7.																						
	125%	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A)</td> </tr> <tr> <td></td> <td style="text-align: right;">(B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A)		(B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																					
OBL Species	x 1 =																					
FACW Species	x 2 =																					
FAC Species	x 3 =																					
FACU Species	x 4 =																					
UPL species	x 5 =																					
Column Totals	(A)																					
	(B)																					
Prevalence Index = B/A =																						
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																						
1. Lonicera canadensis	2%	No	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
2. Viburnum lantanoides	2%	No	FAC																			
3. Acer rubrum	5%	Yes	FAC																			
4. Acer saccharum	2%	No	FACU																			
5.																						
6.																						
7.																						
	11%	= Total Cover																				
<b>Herb Stratum</b> (Plot size: 5')																						
1. Dryopteris intermedia	30%	Yes	FACU	<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.  <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
2. Gymnocarpium dryopteris	10%	No	UPL																			
3. Trientalis borealis	5%	No	FAC																			
4. Cornus alternifolia	2%	No	-																			
5. Oxalis montana	5%	No	FAC																			
6.																						
7.																						
8.																						
9.																						
10.																						
11.																						
12.																						
	52%	= Total Cover																				
<b>Woody Vine Stratum</b> (Plot size: 30')																						
1.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
2.																						
3.																						
4.																						
		= Total Cover																				
Remarks (Include photo numbers here or on a separate sheet.):																						



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Macwahoc Plt / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 08SMQ  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 4 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	





## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Macwahoc Plt / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 08SMX  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                           Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. <i>Betula alleghaniensis</i>	30%	Yes	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)  Total Number of Dominant Species Across All Strata: 9 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 56% (A/B)	
2. <i>Betula papyrifera</i>	20%	Yes	FACU		
3. <i>Thuja occidentalis</i>	5%	No	FACW		
4. <i>Acer rubrum</i>	10%	No	FAC		
5. <i>Tsuga canadensis</i>	5%	No	FACU		
6.					
7.					
	70%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B) Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. <i>Abies balsamea</i>	20%	Yes	FAC		
2. <i>Sambucus racemosa</i> ssp. <i>pubens</i>	3%	No	FACU		
3. <i>Tsuga canadensis</i>	15%	Yes	FACU		
4. <i>Betula alleghaniensis</i>	15%	Yes	FAC		
5. <i>Picea rubens</i>	10%	No	FACU		
6.					
7.					
	63%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Herb Stratum</b> (Plot size: 5')					
1. <i>Trientalis borealis</i>	5%	Yes	FAC		
2. <i>Aralia nudicaulis</i>	5%	Yes	FACU		
3. <i>Gymnocarpium dryopteris</i>	5%	Yes	UPL		
4. <i>Medeola virginiana</i>	3%	No	-		
5. <i>Oxalis montana</i>	5%	Yes	FAC		
6. <i>Ribes lacustre</i>	2%	No	FACW		
7.					
8.					
9.					
10.					
11.					
12.					
	25%	= Total Cover		<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.					
2.					
3.					
4.					
		= Total Cover			<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Macwahoc Plt / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 08SMX  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface Saturation Present?                            Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)</p> <p>Total Number of Dominant Species Across All Strata: 6 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. Thuja occidentalis	60%	Yes	FACW																	
2. Betula alleghaniensis	30%	Yes	FAC																	
3. Abies balsamea	10%	No	FAC																	
4.																				
5.																				
6.																				
7.																				
	100%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Fraxinus nigra	5%	No	FACW																	
2. Corylus cornuta	2%	No	FACU																	
3. Picea rubens	5%	No	FACU																	
4. Abies balsamea	10%	No	FAC																	
5. Betula alleghaniensis	30%	Yes	FAC																	
6.																				
7.																				
	52%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Coptis trifolia	3%	Yes	FAC																	
2. Tiarella cordifolia	3%	Yes	FAC																	
3. Trientalis borealis	3%	Yes	FAC																	
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	9%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Macwahoc Plt / Aroostook Sampling Date: 05/18/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 09SMI  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')																				
1. <i>Betula alleghaniensis</i>	50%	Yes	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)  Total Number of Dominant Species Across All Strata: 7 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 86% (A/B)																
2. <i>Acer rubrum</i>	60%	Yes	FAC																	
3. <i>Thuja occidentalis</i>	15%	No	FACW																	
4. <i>Abies balsamea</i>	15%	No	FAC																	
5.																				
6.																				
7.																				
	140%	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. <i>Betula alleghaniensis</i>	20%	Yes	FAC																	
2. <i>Acer rubrum</i>	20%	Yes	FAC																	
3. <i>Abies balsamea</i>	25%	Yes	FAC																	
4. <i>Acer pensylvanicum</i>	15%	No	FACU																	
5.																				
6.																				
7.																				
	80%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
<b>Herb Stratum</b> (Plot size: 5')																				
1. <i>Dryopteris intermedia</i>	15%	Yes	FACU																	
2.	5%	No																		
3. <i>Clintonia borealis</i>	7%	No	FAC																	
4. <i>Oxalis montana</i>	10%	No	FAC																	
5. <i>Maianthemum canadense</i>	20%	Yes	FAC																	
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	57%	= Total Cover		<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Macwahoc Plt / Aroostook Sampling Date: 05/18/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 09SMI  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 3 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>	
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. Acer rubrum	30%	Yes	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)	
2. Thuja occidentalis	5%	No	FACW		
3. Betula alleghaniensis	50%	Yes	FAC		
4.					
5.					
6.					
7.					
	85%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B)  Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. Fraxinus nigra	7%	No	FACW		
2. Thuja occidentalis	5%	No	FACW		
3. Alnus incana ssp. rugosa	10%	No	FACW		
4. Betula alleghaniensis	25%	Yes	FAC		
5. Abies balsamea	25%	Yes	FAC		
6.					
7.					
	72%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Herb Stratum</b> (Plot size: 5')					
1. Osmunda cinnamomea	5%	No	FACW		
2. Coptis trifolia	5%	No	FAC		
3. Glyceria melicaria	40%	Yes	OBL		
4. Chrysosplenium americanum	15%	No	OBL		
5. Thelypteris palustris var pubescens	15%	No	-		
6. Impatiens capensis	40%	Yes	FACW		
7. Scutellaria galericulata	15%	No	OBL		
8. Ribes lacustre	10%	No	FACW		
9. Rubus pubescens	2%	No	FACW		
10. Cardamine pensylvanica	2%	No	OBL		
11.					
12.					
	149%	= Total Cover		<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.					
2.					
3.					
4.					
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Mattawamkeag/Penobscot Sampling Date: 05/14/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 12EDD  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                           Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)</p> <p>Total Number of Dominant Species Across All Strata: 6 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals (A)</td> <td style="text-align: right;">(B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals (A)	(B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals (A)	(B)																			
Prevalence Index = B/A =																				
1. <i>Picea rubens</i>	50%	Yes	FACU																	
2. <i>Abies balsamea</i>	29%	Yes	FAC																	
3. <i>Tsuga canadensis</i>	14%	No	FACU																	
4. <i>Betula papyrifera</i>	7%	No	FACU																	
5.																				
6.																				
7.																				
	100%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. <i>Abies balsamea</i>	45%	Yes	FAC																	
2. <i>Acer rubrum</i>	5%	No	FAC																	
3.																				
4.																				
5.																				
6.																				
7.																				
	50%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. <i>Maianthemum canadense</i>	10%	Yes	FAC																	
2. <i>Trientalis borealis</i>	5%	Yes	FAC																	
3. <i>Cornus canadensis</i>	5%	Yes	FAC																	
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	20%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Mattawamkeag/Penobscot Sampling Date: 05/14/2010  
 Applicant/Owner: First Wind , LLC. State: ME Sampling Point: 12EDD  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 1 Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 4 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)</p> <p>Total Number of Dominant Species Across All Strata: 5 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. Thuja occidentalis	10%	Yes	FACW																	
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
	10%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Thuja occidentalis	2%	No	FACW																	
2. Abies balsamea	7%	Yes	FAC																	
3. Pinus strobus	5%	Yes	FACU																	
4. Betula populifolia	2%	No	FAC																	
5. Viburnum nudum var. cassinoides	1%	No	FACW																	
6.																				
7.																				
	17%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Carex crinita	80%	Yes	OBL																	
2. Scirpus cyperinus	40%	Yes	FACW																	
3. Carex intumescens	2%	No	FACW																	
4. Typha latifolia	5%	No	OBL																	
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	127%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				









## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Mattawamkeag/Penobscot Sampling Date: 05/14/2010  
 Applicant/Owner: First Wind , LLC. State: ME Sampling Point: 11CFB  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification: PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 2 Saturation Present?                            Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks: NWI wetland	





**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind City/County: ? Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 15DDV  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p><b>Field Observations:</b></p> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                           Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<p><b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b></p>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)</p> <p>Total Number of Dominant Species Across All Strata: 4 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. <i>Ostrya virginiana</i>	5%	No	FACU																	
2. <i>Tsuga canadensis</i>	50%	Yes	FACU																	
3. <i>Betula alleghaniensis</i>	15%	No	FAC																	
4. <i>Acer pensylvanicum</i>	5%	No	FACU																	
5. <i>Acer rubrum</i>	15%	No	FAC																	
6.																				
7.																				
	90%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. <i>Fagus grandifolia</i>	10%	No	FACU																	
2. <i>Acer rubrum</i>	5%	No	FAC																	
3. <i>Acer pensylvanicum</i>	25%	Yes	FACU																	
4. <i>Betula alleghaniensis</i>	5%	No	FAC																	
5. <i>Abies balsamea</i>	10%	No	FAC																	
6. <i>Picea rubens</i>	2%	No	FACU																	
7.																				
	57%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. <i>Acer saccherum</i>	5%	Yes	FACU																	
2. <i>Acer pensylvanicum</i>	3%	Yes	FACU																	
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	8%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC.  
 Investigator(s): DMD, ATA  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: ?  
 State: ME  
 Section, Township, Range:  
 Local relief (concave, convex, none):  
 Long:                              Datum:  
 NWI Classification:

Sampling Date: 05/17/2010  
 Sampling Point: 15DDV

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?      (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): 10	
Saturation Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): surface	
(includes capillary fringe)		
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)</p> <p>Total Number of Dominant Species Across All Strata: 6 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. Tsuga canadensis	70%	Yes	FACU																	
2. Acer rubrum	25%	No	FAC																	
3. Betula alleghaniensis	25%	No	FAC																	
4. Abies balsamea	40%	Yes	FAC																	
5.																				
6.																				
7.																				
	160%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Abies balsamea	5%	Yes	FAC																	
2. Cornus amomum	2%	Yes	FACW																	
3.																				
4.																				
5.																				
6.																				
7.																				
	7%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Onoclea sensibilis	25%	Yes	FACW																	
2. Carex gynandra	50%	Yes	OBL																	
3. Thelypteris palustris var. pubescens	5%	No	-																	
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	80%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Molunkus Twp / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 11EDO  
 Investigator(s): DMD,ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)</p> <p>Total Number of Dominant Species Across All Strata: 6 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. Betula papyrifera	10%	No	FACU																	
2. Tsuga canadensis	30%	Yes	FACU																	
3. Abies balsamea	60%	Yes	FAC																	
4. Picea rubens	20%	No	FACU																	
5. Acer rubrum	5%	No	FAC																	
6. Betula alleghaniensis	5%	No	FAC																	
7.																				
	130%	= Total Cover																		
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. Acer rubrum	5%	No	FAC																	
2. Tsuga canadensis	40%	Yes	FACU																	
3. Abies balsamea	30%	Yes	FAC																	
4. Picea rubens	10%	No	FACU																	
5.																				
6.																				
7.																				
	85%	= Total Cover																		
<b>Herb Stratum</b> (Plot size: 5')																				
1. Oxalis montana	60%	Yes	FAC																	
2. Dryopteris intermedia	10%	No	FACU																	
3. Linnaea borealis	60%	Yes	FAC																	
4. Maianthemum canadense	5%	No	FAC																	
5. Trientalis borealis	5%	No	FAC																	
6. Betula alleghaniensis	5%	No	FAC																	
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	145%	= Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Molunkus Twp / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 11EDO  
 Investigator(s): DMD, ATA Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 4 Saturation Present?                            Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)</p> <p>Total Number of Dominant Species Across All Strata: 6 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. Tsuga canadensis	10%	Yes	FACU																	
2. Abies balsamea	5%	No	FAC																	
3. Picea rubens	15%	Yes	FACU																	
4.																				
5.																				
6.																				
7.																				
	30%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Abies balsamea	30%	Yes	FAC																	
2. Acer rubrum	20%	Yes	FAC																	
3. Thuja occidentalis	3%	No	FACW																	
4. Alnus incana ssp. rugosa	10%	No	FACW																	
5. Picea rubens	7%	No	FACU																	
6. Tsuga canadensis	2%	No	FACU																	
7.																				
	72%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Carex trisperma	10%	Yes	OBL																	
2. Cornus canadensis	5%	Yes	FAC																	
3.	3%	No																		
4. Trientalis borealis	2%	No	FAC																	
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	20%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind

City/County: North Yarmouth Academy  
Grant TWP / Aroostook

Sampling Date: 05/18/2010

Applicant/Owner: First Wind, LLC.

State: ME

Sampling Point: 07MJE

Investigator(s): DMD, ATA

Section, Township, Range:

Landform (hillslope, terrace, etc.):

Local relief (concave, convex, none):

Slope (%):

Lat:

Long:

Datum:

Soil Map Unit Name:

NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology  significantly disturbed?

Are "Normal Circumstances" present? Yes  No

Are Vegetation , Soil , or Hydrology  naturally problematic?

(If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b>		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)</p> <p>Total Number of Dominant Species Across All Strata: 7 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. Tsuga canadensis	40%	Yes	FACU																	
2. Acer rubrum	10%	No	FAC																	
3. Thuja occidentalis	10%	No	FACW																	
4. Abies balsamea	60%	Yes	FAC																	
5.																				
6.																				
7.																				
	120%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Tsuga canadensis	10%	Yes	FACU																	
2. Abies balsamea	40%	Yes	FAC																	
3.																				
4.																				
5.																				
6.																				
7.																				
	50%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Aralia nudicaulis	5%	Yes	FACU																	
2. Thuja occidentalis	5%	Yes	FACW																	
3. Abies balsamea	5%	Yes	FAC																	
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	15%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: North Yarmouth Academy  
Grant TWP / Aroostook Sampling Date: 05/18/2010

Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 07MJE

Investigator(s): DMD, ATA Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):

Slope (%): Lat: Long: Datum:

Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b>		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): 3	
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): surface	
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</p> <p>Total Number of Dominant Species Across All Strata: 3 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals (A)</td> <td style="text-align: right;">(B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals (A)	(B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals (A)	(B)																			
Prevalence Index = B/A =																				
1. Acer rubrum	10%	No	FAC																	
2. Abies balsamea	100%	Yes	FAC																	
3. Thuja occidentalis	10%	No	FACW																	
4.																				
5.																				
6.																				
7.																				
	120%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Abies balsamea	30%	Yes	FAC																	
2. Lonicera canadensis	5%	No	FACU																	
3. Tsuga canadensis	5%	No	FACU																	
4. Thuja occidentalis	5%	No	FACW																	
5.																				
6.																				
7.																				
	45%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Rubus pubescens	5%	Yes	FACW																	
2. Thelypteris palustris var. pubescens	5%	No	-																	
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	10%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC.  
 Investigator(s): ETD, SRB  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: Macwahoc Plt. /Aroostook      Sampling Date: 05/18/2010  
 State: ME                      Sampling Point: 11CFJ  
 Section, Township, Range:  
 Local relief (concave, convex, none):  
 Long:                              Datum:  
 NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?      (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. <i>Betula alleghaniensis</i>	35%	Yes	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)	
2. <i>Tsuga canadensis</i>	15%	Yes	FACU		
3. <i>Abies balsamea</i>	15%	Yes	FAC		
4.					
5.					
6.					
7.					
	65%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B)  Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. <i>Abies balsamea</i>	30%	Yes	FAC		
2. <i>Betula alleghaniensis</i>	15%	No	FAC		
3. <i>Acer saccharum</i>	15%	No	FACU		
4. <i>Corylus cornuta</i>	30%	Yes	FACU		
5. <i>Acer spicatum</i>	2%	No	FACU		
6.					
7.					
	92%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Herb Stratum</b> (Plot size: 5')					
1. <i>Rubus hispidus</i>	60%	Yes	FACW		
2. <i>Carex crinita</i>	10%	No	OBL		
3. <i>Onoclea sensibilis</i>	15%	No	FACW		
4. <i>Athyrium filix-femina</i> var. <i>angustum</i>	5%	No	FAC		
5. <i>Fragaria virginiana</i>	10%	No	FACU		
6. <i>Betula alleghaniensis</i>	5%	No	FAC		
7. <i>Cornus canadensis</i>	2%	No	FAC		
8. <i>Equisetum sylvaticum</i>	1%	No	FACW		
9.					
10.					
11.					
12.					
	108%	= Total Cover		<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.					
2.					
3.					
4.					
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC.  
 Investigator(s): ETD, SRB  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: Macwahoc Plt. /Aroostook      Sampling Date: 05/18/2010  
 State: ME                      Sampling Point: 11CFJ  
 Section, Township, Range:  
 Local relief (concave, convex, none):  
 Long:                      Datum:  
 NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?      (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	





## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Macwahoc Plt. /Aroostook Sampling Date: 05/18/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 20EDX  
 Investigator(s): ETD, SRB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
(includes capillary fringe)		
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		





## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Macwahoc Plt. /Aroostook Sampling Date: 05/18/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 20EDX  
 Investigator(s): ETD, SRB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 1 Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. Acer rubrum	40%	Yes	FAC	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)	
2. Betula alleghaniensis	20%	Yes	FAC		
3. Populus tremuloides	10%	No	NI		
4.					
5.					
6.					
7.					
	70%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B)  Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. Acer rubrum	25%	Yes	FAC		
2. Betula alleghaniensis	15%	Yes	FAC		
3. Betula populifolia	10%	No	FAC		
4. Abies balsamea	15%	Yes	FAC		
5. Acer pensylvanicum	5%	No	FACU		
6.					
7.					
	70%	= Total Cover			
<b>Herb Stratum</b> (Plot size: 5')					
1. Onoclea sensibilis	50%	Yes	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. Impatiens capensis	20%	No	FACW		
3. Viola pallens	10%	No	OBL		
4. Equisetum arvense	15%	No	FAC		
5. Carex crinita	15%	No	OBL		
6.					
7.					
8.					
9.					
10.					
11.					
12.					
	110%	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.				<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
2.					
3.					
4.					
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC.  
 Investigator(s): ETD, SRB  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: Reed Plt. / Aroostook  
 State: ME  
 Section, Township, Range:  
 Local relief (concave, convex, none):  
 Long:                              Datum:  
 NWI Classification:

Sampling Date: 05/18/2010  
 Sampling Point: 11EDC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?      (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?          Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	





## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Reed Plt. / Aroostook Sampling Date: 05/18/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 11EDC  
 Investigator(s): ETD, SRB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (Inches):	Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (Inches):	
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)		
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. Populus tremuloides	15%	No	NI	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)	
2. Acer rubrum	15%	Yes	FAC		
3. Fraxinus nigra	30%	Yes	FACW		
4.					
5.					
6.					
7.					
	60%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B)  Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. Fraxinus nigra	25%	Yes	FACW		
2. Acer rubrum	15%	Yes	FAC		
3. Betula alleghaniensis	5%	No	FAC		
4. Thuja occidentalis	5%	No	FACW		
5. Prunus virginiana	5%	No	FACU		
6.					
7.					
	55%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Herb Stratum</b> (Plot size: 5')					
1. Rubus hispidus	35%	Yes	FACW		
2. Solidago rugosa	10%	No	FAC		
3. Impatiens capensis	15%	Yes	FACW		
4. Ariseaema triphyllum	5%	No	FACW		
5. Cardamine pensylvanica	2%	No	OBL		
6. Viola pallens	2%	No	OBL		
7.					
8.					
9.					
10.					
11.					
12.					
	69%	= Total Cover		<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.					
2.					
3.					
4.					
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Reed Plt. / Aroostook Sampling Date: 05/18/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 18EDM  
 Investigator(s): ETD, SRB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	





## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC.  
 Investigator(s): ETD, SRB  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: Reed Plt. / Aroostook  
 State: ME  
 Section, Township, Range:  
 Local relief (concave, convex, none):  
 Long:                                  Datum:  
 NWI Classification:

Sampling Date: 05/18/2010  
 Sampling Point: 18EDM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?      (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?         Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u> (Plot size: 30')				<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 3 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
1.				
2.				
3.				
4.				
5.				
6.				
7.				<b>Prevalence Index worksheet:</b>  Total % Cover of: <span style="float: right;">Multiply by:</span>  OBL Species <span style="float: right;">x 1 =</span> FACW Species <span style="float: right;">x 2 =</span> FAC Species <span style="float: right;">x 3 =</span> FACU Species <span style="float: right;">x 4 =</span> UPL species <span style="float: right;">x 5 =</span> Column Totals (A) <span style="float: right;">(B)</span>  Prevalence Index = B/A =
= Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: 15')				
1. <i>Alnus incana</i> ssp. <i>rugosa</i>	15%	Yes	FACW	
2. <i>Betula populifolia</i>	5%	No	FAC	
3. <i>Betula alleghaniensis</i>	5%	No	FAC	
4. <i>Abies balsamea</i>	10%	Yes	FAC	
5. <i>Salix bebbiana</i>	5%	No	FACW	
6.				
7.				<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
40% = Total Cover				
<u>Herb Stratum</u> (Plot size: 5')				
1. <i>Rubus idaeus</i>	50%	Yes	FAC	
2. <i>Abies balsamea</i>	15%	No	FAC	
3. <i>Salix bebbiana</i>	5%	No	FACW	
4. <i>Rubus hispidus</i>	15%	No	FACW	
5. <i>Impatiens capensis</i>	10%	No	FACW	
6. <i>Viola pallens</i>	5%	No	OBL	
7. <i>Galium aparine</i>	5%	No	FACU	
8.				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
105% = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: 30')				
1.				
2.				
3.				
4.				
= Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks (Include photo numbers here or on a separate sheet.): vegetation has been impacted due to timber harvesting				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Reed Plt. / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 10SMH  
 Investigator(s): ETD, SRB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')																				
1. Tsuga canadensis	45%	Yes	FACU	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 7 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (A/B)																
2. Picea rubens	20%	Yes	FACU																	
3. Abies balsamea	15%	No	FAC																	
4.																				
5.																				
6.																				
7.																				
	80%	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. Abies balsamea	25%	Yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. Tsuga canadensis	15%	Yes	FACU																	
3. Lonicera canadensis	2%	No	-																	
4.																				
5.																				
6.																				
7.																				
	42%	= Total Cover																		
<b>Herb Stratum</b> (Plot size: 5')																				
1. Trientalis borealis	1%	Yes	FAC	<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.  <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																
2. Maianthemum canadense	1%	Yes	FAC																	
3. Aralia nudicaulis	1%	Yes	FACU																	
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	3%	= Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.				<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Reed Plt. / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 10SMH

Investigator(s): ETD, SRB Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):

Slope (%): Lat: Long: Datum:

Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</p> <p>Total Number of Dominant Species Across All Strata: 7 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td>x 1 =</td> </tr> <tr> <td>FACW Species 2%</td> <td>x 2 = 4</td> </tr> <tr> <td>FAC Species 110%</td> <td>x 3 = 330</td> </tr> <tr> <td>FACU Species 75%</td> <td>x 4 = 300</td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> </tr> <tr> <td>Column Totals 187 (A)</td> <td>634 (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = 3.39</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is <math>\leq 3.0^1</math></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species 2%	x 2 = 4	FAC Species 110%	x 3 = 330	FACU Species 75%	x 4 = 300	UPL species	x 5 =	Column Totals 187 (A)	634 (B)	Prevalence Index = B/A = 3.39	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species 2%	x 2 = 4																			
FAC Species 110%	x 3 = 330																			
FACU Species 75%	x 4 = 300																			
UPL species	x 5 =																			
Column Totals 187 (A)	634 (B)																			
Prevalence Index = B/A = 3.39																				
1. <i>Abies balsamea</i>	30%	Yes	FAC																	
2. <i>Acer rubrum</i>	20%	Yes	FAC																	
3. <i>Betula alleghaniensis</i>	5%	No	FAC																	
4. <i>Picea rubens</i>	15%	Yes	FACU																	
5.																				
6.																				
7.																				
	70%	= Total Cover																		
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. <i>Abies balsamea</i>	40%	Yes	FAC																	
2. <i>Tsuga canadensis</i>	20%	Yes	FACU																	
3. <i>Betula alleghaniensis</i>	5%	No	FAC																	
4.																				
5.																				
6.																				
7.																				
	65%	= Total Cover																		
<b>Herb Stratum</b> (Plot size: 5')																				
1. <i>Oxalis montana</i>	5%	No	FAC																	
2. <i>Dryopteris intermedia</i>	20%	Yes	FACU																	
3. <i>Lonicera canadensis</i>	15%	Yes	FACU																	
4. <i>Trientalis borealis</i>	5%	No	FAC																	
5. <i>Aralia nudicaulis</i>	5%	No	FACU																	
6. <i>Rubus hispidus</i>	2%	No	FACW																	
7. <i>Phegopteris connectilis</i>	2%	No	-																	
8.																				
9.																				
10.																				
11.																				
12.																				
	54%	= Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
<p>Remarks (Include photo numbers here or on a separate sheet.): <i>Tsuga canadensis</i> and <i>Abies balsamea</i> are problematic species of vegetation dominant in the wetland community. Chapter 5 procedures for Difficult Wetland Situations were applied to make the hydrophytic vegetation determination.</p>																				





**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')																				
1. Thuja occidentalis	15%	Yes	FACW	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)  Total Number of Dominant Species Across All Strata: 7 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)																
2. Abies balsamea	10%	No	FAC																	
3. Betula alleghaniensis	25%	Yes	FAC																	
4. Acer rubrum	10%	No	FAC																	
5. Picea rubens	15%	Yes	FACU																	
6.																				
7.																				
	75%	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. Abies balsamea	20%	Yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. Betula alleghaniensis	20%	Yes	FACU																	
3. Acer rubrum	15%	Yes	FAC																	
4.																				
5.																				
6.																				
7.																				
	55%	= Total Cover																		
<b>Herb Stratum</b> (Plot size: 5')																				
1. Gymnocarpium dryopteris	15%	Yes	UPL	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.  <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. Thelyteris noveboracensis	5%	Yes	FAC																	
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	20%	= Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Reed Plt. / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 20EDV

Investigator(s): ETD, SRB Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):

Slope (%): Lat: Long: Datum:

Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input checked="" type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): surface	
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)</p> <p>Total Number of Dominant Species Across All Strata: 7 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. Thuja occidentalis	25%	Yes	FACW																	
2. Abies balsamea	25%	Yes	FAC																	
3. Betula alleghaniensis	15%	Yes	FAC																	
4.																				
5.																				
6.																				
7.																				
	65%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Abies balsamea	15%	Yes	FAC																	
2. Picea rubens	10%	Yes	FACU																	
3.																				
4.																				
5.																				
6.																				
7.																				
	25%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Onoclea sensibilis	1%	Yes	FACW																	
2. Dryopteris intermedia	1%	Yes	FACU																	
3. Carex pedunculata	1%	No	-																	
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
		= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				





**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u> (Plot size: 30')				<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)  <b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B)  Prevalence Index = B/A =
1. Tsuga canadensis	20%	Yes	FACU	
2. Betula alleghaniensis	15%	Yes	FAC	
3.				
4.				
5.				
6.				
7.				
	35%	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')				
1. Acer rubrum	50%	Yes	FAC	
2. Betula alleghaniensis	10%	No	FAC	
3. Tsuga canadensis	20%	Yes	FACU	
4. Abies balsamea	10%	No	FAC	
5. Betula populifolia	5%	No	FAC	
6.				
7.				
	95%	= Total Cover		
<u>Herb Stratum</u> (Plot size: 5')				
1. Maianthemum canadense	25%	Yes	FAC	
2. Dennstaedtia punctilobula	20%	Yes	-	
3. Abies balsamea	5%	No	FAC	
4. Oclemena acuminata	5%	No	-	
5. Cornus canadensis	5%	No	FACU	
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	60%	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: 30')				
1.				
2.				
3.				
4.				
		= Total Cover		
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks (Include photo numbers here or on a separate sheet.):				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Reed Plt. / Aroostook Sampling Date: 05/17/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 07CFU

Investigator(s): ETD, SRB Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):

Slope (%): Lat: Long: Datum:

Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                           Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	





**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind City/County: Aroostook County Sampling Date: 05/11/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 17EDC  
 Investigator(s): ETD, ATA Section, Township, Range: T4 R3 WELS  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p><b>Field Observations:</b></p> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<p><b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b></p>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)</p> <p>Total Number of Dominant Species Across All Strata: 5 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is <math>\leq 3.0^1</math></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
1. Tsuga canadensis	40%	Yes	FACU																	
2. Picea rubens	25%	Yes	FACU																	
3.																				
4.																				
5.																				
6.																				
7.																				
	65%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Picea rubens	45%	Yes	FACU																	
2. Acer rubrum	10%	No	FAC																	
3. Betula alleghaniensis	10%	No	FAC																	
4. Abies balsamea	5%	No	FAC																	
5. Acer pensylvanicum	5%	No	FACU																	
6.																				
7.																				
	75%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Abies balsamea	35%	Yes	FAC																	
2. Picea rubens	25%	Yes	FACU																	
3. Cornus canadensis	5%	No	FAC																	
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	65%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: 30')																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Hill City/County: Aroostook County Sampling Date: 5/11/2010  
 Applicant/Owner: First Wind State: ME Sampling Point: 17EDC  
 Investigator(s): ETD, ATA Section, Township, Range: T4 R3 WELS  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)</p> <p>Total Number of Dominant Species Across All Strata: 3 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;"><u>Total % Cover of:</u></th> <th colspan="2" style="text-align: center;"><u>Multiply by:</u></th> </tr> </thead> <tbody> <tr> <td>OBL Species</td> <td style="text-align: center;">90%</td> <td style="text-align: center;">x 1 =</td> <td style="text-align: center;">90</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: center;">5%</td> <td style="text-align: center;">x 2 =</td> <td style="text-align: center;">10</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: center;">2%</td> <td style="text-align: center;">x 3 =</td> <td style="text-align: center;">6</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: center;">85%</td> <td style="text-align: center;">x 4 =</td> <td style="text-align: center;">340</td> </tr> <tr> <td>UPL species</td> <td></td> <td style="text-align: center;">x 5 =</td> <td></td> </tr> <tr> <td>Column Totals</td> <td style="text-align: center;">182 (A)</td> <td></td> <td style="text-align: center;">446 (B)</td> </tr> <tr> <td colspan="4" style="text-align: center;">Prevalence Index = B/A = 2.45</td> </tr> </tbody> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>		<u>Multiply by:</u>		OBL Species	90%	x 1 =	90	FACW Species	5%	x 2 =	10	FAC Species	2%	x 3 =	6	FACU Species	85%	x 4 =	340	UPL species		x 5 =		Column Totals	182 (A)		446 (B)	Prevalence Index = B/A = 2.45			
<u>Total % Cover of:</u>		<u>Multiply by:</u>																																		
OBL Species	90%	x 1 =	90																																	
FACW Species	5%	x 2 =	10																																	
FAC Species	2%	x 3 =	6																																	
FACU Species	85%	x 4 =	340																																	
UPL species		x 5 =																																		
Column Totals	182 (A)		446 (B)																																	
Prevalence Index = B/A = 2.45																																				
1. Picea rubens	50%	Yes	FACU																																	
2. Tsuga canadensis	10%	No	FACU																																	
3.																																				
4.																																				
5.																																				
6.																																				
7.																																				
	60%	= Total Cover																																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																																				
1. Picea rubens	25%	Yes	FACU																																	
2.																																				
3.																																				
4.																																				
5.																																				
6.																																				
7.																																				
	25%	= Total Cover																																		
<u>Herb Stratum</u> (Plot size: 5')																																				
1. Carex trisperma	90%	Yes	OBL																																	
2. Gaultheria hispidula	5%	No	FACW																																	
3. Betula alleghaniensis	2%	No	FAC																																	
4.																																				
5.																																				
6.																																				
7.																																				
8.																																				
9.																																				
10.																																				
11.																																				
12.																																				
	97%	= Total Cover																																		
<u>Woody Vine Stratum</u> (Plot size: 30')																																				
1.																																				
2.																																				
3.																																				
4.																																				
		= Total Cover																																		
<p>Remarks (Include photo numbers here or on a separate sheet.): Picea rubens is a problematic species of vegetation dominant in the wetland community. Chapter 5 procedures for Difficult Wetland Situations were applied to make the hydrophytic vegetation determination.</p>																																				



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Hill City/County: Aroostook County Sampling Date: 5/11/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 17EDF  
 Investigator(s): ETD, ATA Section, Township, Range: T4 R3 WELS  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p><b>Field Observations:</b></p> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<p><b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b></p>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')																				
1. <i>Fagus grandifolia</i>	50%	Yes	FACU	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 17% (A/B)																
2. <i>Picea rubens</i>	10%	No	FACU																	
3. <i>Acer saccharum</i>	10%	No	FACU																	
4.																				
5.																				
6.																				
7.																				
	70%	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width:100%; border:none;"> <tr> <td style="text-align:center;"><u>Total % Cover of:</u></td> <td style="text-align:center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align:right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align:right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align:right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align:right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align:right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align:right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. <i>Fagus grandifolia</i>	35%	Yes	FACU																	
2. <i>Acer pensylvanicum</i>	20%	Yes	FACU																	
3. <i>Picea rubens</i>	15%	Yes	FACU																	
4. <i>Abies balsamea</i>	5%	No	FAC																	
5.																				
6.																				
7.																				
	75%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
<b>Herb Stratum</b> (Plot size: 5')																				
1. <i>Maianthemum canadense</i>	40%	Yes	FAC																	
2. <i>Acer saccharum</i>	15%	Yes	FACU																	
3. <i>Streptopus lanceolatus</i>	10%	No	FAC																	
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	65%	= Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.				<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
2.																				
3.																				
4.																				
		= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																
Remarks (Include photo numbers here or on a separate sheet.):																				



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind City/County: Aroostook County Sampling Date: 05/11/2010  
 Applicant/Owner: First Wind, LLC. State: ME Sampling Point: 17EDF  
 Investigator(s): ETD, ATA Section, Township, Range: T4 R3 WELS  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (Inches): Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>	
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: 30')					
1. Fraxinus nigra	40%	Yes	FACW	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)  Total Number of Dominant Species Across All Strata: 9 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)	
2. Acer rubrum	20%	Yes	FAC		
3. Ulmus americana	20%	Yes	FACW		
4. Picea rubens	10%	No	FACU		
5.					
6.					
7.					
	90%	= Total Cover		<b>Prevalence Index worksheet:</b>  <div style="display: flex; justify-content: space-between;"> <span><u>Total % Cover of:</u></span> <span><u>Multiply by:</u></span> </div> OBL Species x 1 = FACW Species x 2 = FAC Species x 3 = FACU Species x 4 = UPL species x 5 = Column Totals (A) (B) Prevalence Index = B/A =	
<b>Sapling/Shrub Stratum</b> (Plot size: 15')					
1. Fraxinus nigra	25%	Yes	FACW		
2. Abies balsamea	20%	Yes	FAC		
3. Ulmus americana	15%	Yes	FACW		
4. Betula alleghaniensis	10%	No	FAC		
5.					
6.					
7.					
	70%	= Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Herb Stratum</b> (Plot size: 5')					
1. Rubus pubescens	40%	Yes	FACW		
2. Ribes lacustre	20%	Yes	FACW		
3. Matteuccia struthiopteris	20%	Yes	FACW		
4. Equisetum sylvaticum	15%	No	FACW		
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
	95%	= Total Cover		<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
<b>Woody Vine Stratum</b> (Plot size: 30')					
1.					
2.					
3.					
4.					
		= Total Cover			<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind  
 Applicant/Owner: First Wind, LLC  
 Investigator(s): CWF, SB  
 Landform (hillslope, terrace, etc.):  
 Slope (%):                      Lat:  
 Soil Map Unit Name:

City/County: Woodville / Penobscot                      Sampling Date: 05/13/2010  
 State: ME                      Sampling Point: 11CFA

Section, Township, Range:  
 Local relief (concave, convex, none):  
 Long:                      Datum:  
 NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed?                      Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic?                      (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</p> <p>Total Number of Dominant Species Across All Strata: 3 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals (A)</td> <td style="text-align: right;">(B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals (A)	(B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals (A)	(B)																			
Prevalence Index = B/A =																				
1. Acer rubrum	50%	Yes	FAC																	
2. Populus tremuloides	15%	No	NI																	
3. Abies balsamea	30%	Yes	FAC																	
4. Betula alleghaniensis	5%	No	FAC																	
5.																				
6.																				
7.																				
	100%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Abies balsamea	65%	Yes	FAC																	
2. Picea rubens	5%	No	FACU																	
3.																				
4.																				
5.																				
6.																				
7.																				
	70%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1.																				
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
		= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size:      )																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				

**SOIL**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):								
Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
1-0								<b>organic</b>
0-1	10yr 4/4	100%					silt-loam	
1-4	10yr 5/6	100%					silt-loam	
4-17+	2.5y 5/4	100%	7.5yr 5/8	2%	C	M	silt-loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F7)
- Depleted Dark Surface (F6)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR, K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149 B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type:  
Depth (inches):

Hydric Soil Present? Yes  No

**Remarks:**



**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)																
1. Acer rubrum	55%	Yes	FAC																	
2. Abies balsamea	32%	Yes	FAC																	
3. Thuja occidentalis	9%	No	FACW																	
4. Larix laricina	5%	No	FACW																	
5.																				
6.																				
7.																				
	101%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Abies balsamea	25%	Yes	FAC	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
2. Alnus rugosa	20%	Yes	FACW																	
3.																				
4.																				
5.																				
6.																				
7.																				
	45%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Onoclea sensibilis	30%	Yes	FACW																	
2. Rubus hispidus	15%	Yes	FACW																	
3. Ribes glandulosum	1%	No	FACW																	
4. Equisetum sylvaticum	1%	No	FACW																	
5. Carex sp.	2%	No	-																	
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	49%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: )																				
1.				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2.																				
3.																				
4.																				
		= Total Cover																		
				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
Remarks (Include photo numbers here or on a separate sheet.):																				



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind City/County: Woodville / Penobscot Sampling Date: 05/13/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 02MAO  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)                      <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> High Water Table (A2)                <input type="checkbox"/> Aquatic Fauna (B13)  <input type="checkbox"/> Saturation (A3)                            <input type="checkbox"/> Marl Deposits (B15)  <input type="checkbox"/> Water Marks (B1)                        <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Sediment Deposits (B2)                <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Drift Deposits (B3)                      <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Algal Mat or Crust (B4)                 <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Iron Deposits (B5)                        <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)   <input type="checkbox"/> Other (Explain in Remarks)  <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)  <input type="checkbox"/> Drainage Patterns (B10)  <input type="checkbox"/> Moss Trim Lines (B16)  <input type="checkbox"/> Dry-Season Water Table (C2)  <input type="checkbox"/> Crayfish Burrows (C8)  <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  <input type="checkbox"/> Stunted or Stressed Plants (D1)  <input type="checkbox"/> Geomorphic Position (D2)  <input type="checkbox"/> Shallow Aquitard (D3)  <input type="checkbox"/> Microtopographic Relief (D4)  <input type="checkbox"/> FAC-Neutral Test (D5)</p>
<p><b>Field Observations:</b></p> <p>Surface Water Present?            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):                  Water Table Present?            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):                  Saturation Present?                Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):                  (includes capillary fringe)</p>	<p><b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b></p>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. <i>Betula alleghaniensis</i>	50%	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	3 (A)
2. <i>Acer pensylvanicum</i>	50%	Yes	FACU	Total Number of Dominant Species Across All Strata:	6 (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC:	50% (A/B)
4.				<b>Prevalence Index worksheet:</b>	
5.				<u>Total % Cover of:</u>	<u>Multiply by:</u>
6.				OBL Species	x 1 =
7.				FACW Species	x 2 =
				FAC Species	x 3 =
				FACU Species	x 4 =
				UPL species	x 5 =
				Column Totals	(A) (B)
	100%	= Total Cover		Prevalence Index = B/A =	
<u>Sapling/Shrub Stratum</u> (Plot size: 15')				<b>Hydrophytic Vegetation Indicators:</b>	
1. <i>Fagus grandifolia</i>	25%	Yes	FACU	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
2. <i>Abies balsamea</i>	30%	Yes	FAC	<input type="checkbox"/> Dominance Test is > 50%	
3. <i>Acer pensylvanicum</i>	15%	Yes	FACU	<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
4. <i>Acer saccharum</i>	5%	No	FACU	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. <i>Betula populifolia</i>	2%	No	FAC	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7.				<b>Definitions of Vegetation Strata:</b>	
				<b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.	
				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
	77%	= Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
<u>Herb Stratum</u> (Plot size: 5')					
1. <i>Maianthemum canadense</i>	60%	Yes	FAC		
2. <i>Trientalis borealis</i>	15%	No	FAC		
3. <i>Aralia nudicaulis</i>	5%	No	FACU		
4. <i>Cornus canadensis</i>	2%	No	FAC		
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
	82%	= Total Cover			
<u>Woody Vine Stratum</u> (Plot size:      )					
1.					
2.					
3.					
4.					
			= Total Cover		
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Woodville / Penobscot Sampling Date: 05/13/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 02MAO  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 5 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)</p> <p>Total Number of Dominant Species Across All Strata: 4 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals (A)</td> <td style="text-align: right;">(B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals (A)	(B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals (A)	(B)																			
Prevalence Index = B/A =																				
1. <i>Betula alleghaniensis</i>	42%	Yes	FAC																	
2. <i>Thuja occidentalis</i>	17%	No	FACW																	
3. <i>Tsuga canadensis</i>	17%	No	FACU																	
4. <i>Acer rubrum</i>	8%	No	FAC																	
5. <i>Picea rubens</i>	8%	No	FACU																	
6. <i>Fraxinus nigra</i>	8%	No	FACW																	
7.																				
	100%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. <i>Betula populifolia</i>	20%	Yes	FAC																	
2. <i>Abies balsamea</i>	15%	Yes	FAC																	
3. <i>Fraxinus nigra</i>	10%	No	FACW																	
4. <i>Betula alleghaniensis</i>	5%	No	FAC																	
5. <i>Fraxinus pennsylvanica</i>	2%	No	FACW																	
6.																				
7.																				
	52%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. <i>Scirpus cyperinus</i>	70%	Yes	FACW																	
2. <i>Glyceria striata</i>	2%	No	OBL																	
3. <i>Carex scoparia</i>	5%	No	FACW																	
4. <i>Chelone glabra</i>	5%	No	OBL																	
5. <i>Onoclea sensibilis</i>	2%	No	FACW																	
6. <i>Rubis hispidus</i>	2%	No	FACW																	
7. <i>Solidago rugosa</i>	1%	No	FAC																	
8.																				
9.																				
10.																				
11.																				
12.																				
	87%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size:      )																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				

**SOIL**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators):								
Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
1-0								<b>litter</b>
0-3	<b>10yr 2/2</b>	<b>100%</b>					<b>silt-loam</b>	
3-15	<b>2.5y 4/2</b>	<b>75%</b>	<b>5yr 4/6</b>	<b>15%</b>	<b>C</b>	<b>M</b>	<b>sandy-loam</b>	
15								<b>refusal</b>

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F7)
- Depleted Dark Surface (F6)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR, K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149 B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: bedrock  
Depth (inches): 15

**Hydric Soil Present? Yes  No**

**Remarks:**



**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. Thuja occidentalis	50%	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:	3 (A)
2. Tsuga canadensis	25%	Yes	FACU	Total Number of Dominant Species Across All Strata:	4 (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC:	75% (A/B)
4.				<b>Prevalence Index worksheet:</b>	
5.				<u>Total % Cover of:</u>	<u>Multiply by:</u>
6.				OBL Species	x 1 =
7.	75%	= Total Cover		FACW Species	x 2 =
<u>Sapling/Shrub Stratum</u> (Plot size: 15')				FAC Species	x 3 =
1. Abies balsamea	5%	No	FAC	FACU Species	x 4 =
2. Picea rubens	5%	No	FACU	UPL species	x 5 =
3. Tsuga canadensis	5%	No	FACU	Column Totals	(A) (B)
4. Betula populifolia	60%	Yes	FAC	Prevalence Index = B/A =	
5. Acer rubrum	2%	No	FAC	<b>Hydrophytic Vegetation Indicators:</b>	
6.				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
7.				<input checked="" type="checkbox"/> Dominance Test is > 50%	
8.				<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
9.				<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
10.				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
12.				<b>Definitions of Vegetation Strata:</b>	
				<b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.	
				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
<u>Herb Stratum</u> (Plot size: 5')				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1. Maianthemum canadense	30%	Yes	FAC		
2. Solidago canadensis	2%	No	FACU		
3. Mitchella repens	2%	No	FACU		
4. Cornus canadensis	1%	No	FAC		
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.	35%	= Total Cover			
<u>Woody Vine Stratum</u> (Plot size: )					
1.					
2.					
3.					
4.					
			= Total Cover		
Remarks (Include photo numbers here or on a separate sheet.):					



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind City/County: Woodville / Penobscot Sampling Date: 05/13/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 02MAD  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): 2	
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): surface	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)</p> <p>Total Number of Dominant Species Across All Strata: 5 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td>x 1 =</td> </tr> <tr> <td>FACW Species</td> <td>x 2 =</td> </tr> <tr> <td>FAC Species</td> <td>x 3 =</td> </tr> <tr> <td>FACU Species</td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> </tr> <tr> <td>Column Totals (A)</td> <td>(B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is &gt; 50%</p> <p><input type="checkbox"/> Prevalence Index is ≤ 3.0<sup>1</sup></p> <p><input type="checkbox"/> Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals (A)	(B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals (A)	(B)																			
Prevalence Index = B/A =																				
1. Thuja occidentalis	50%	Yes	FACW																	
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
	50%	= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																				
1. Abies balsamea	20%	Yes	FAC																	
2. Betula populifolia	7%	No	FAC																	
3. Salix bebbiana	5%	No	FACW																	
4. Spirea tomentosa	5%	No	FACW																	
5. Betula alleghaniensis	5%	No	FAC																	
6. Picea rubens	5%	No	FACU																	
7. Tsuga canadensis	5%	No	FACU																	
	52%	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 5')																				
1. Scirpus cyperinus	5%	Yes	FACW																	
2. Rubus hispidus	2%	Yes	FACW																	
3. Carex trisperma	2%	Yes	OBL																	
4. Equisetum sylvaticum	1%	No	FACW																	
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	10%	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size:      )																				
1.																				
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Chester / Penobscot Sampling Date: 05/13/2010  
 Applicant/Owner: First Wind, LLC State: ME Sampling Point: 08CFQ  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                            Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	







**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. Thuja occidentalis	20%	Yes	FACW+	Number of Dominant Species That Are OBL, FACW, or FAC:	5 (A)
2.				Total Number of Dominant Species Across All Strata:	5 (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC:	100% (A/B)
4.				<b>Prevalence Index worksheet:</b>	
5.				<u>Total % Cover of:</u>	<u>Multiply by:</u>
6.				OBL Species	x 1 =
7.	20%	= Total Cover		FACW Species	x 2 =
<u>Sapling/Shrub Stratum</u> (Plot size: 15')				FAC Species	x 3 =
1. Thuja occidentalis	25%	Yes	FAC	FACU Species	x 4 =
2. Betula populifolia	10%	Yes	FACW+	UPL species	x 5 =
3. Abies balsamea	2%	No	FAC	Column Totals	(A) (B)
4. Larix laricina	2%	No	FACW+	Prevalence Index = B/A =	
5. Acer rubrum	2%	No	FAC	<b>Hydrophytic Vegetation Indicators:</b>	
6. Betula alleghaniensis	1%	No	FAC	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
7. Salix bebbiana	1%	No	FACW+	<input checked="" type="checkbox"/> Dominance Test is > 50%	
	43%	= Total Cover		<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
<u>Herb Stratum</u> (Plot size: 5')				<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
1. Calamagrostis canadensis	60%	Yes	FACW+	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
2. Impatiens capensis	20%	Yes	FACW+	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
3.				<b>Definitions of Vegetation Strata:</b>	
4.				<b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.	
5.				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
6.				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
7.				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.	
8.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
9.					
10.					
11.					
12.	80%	= Total Cover			
<u>Woody Vine Stratum</u> (Plot size:      )					
1.					
2.					
3.					
4.					
			= Total Cover		
Remarks (Include photo numbers here or on a separate sheet.):					



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Woodville/Penobscot Sampling Date: 05/14/2010  
 Applicant/Owner: First Wind LLC. State: ME Sampling Point: 04AAL  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches):	
(includes capillary fringe)		
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		











## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Beech Wind City/County: Woodville/Penobscot Sampling Date: 05/14/2010  
 Applicant/Owner: First Wind LLC. State: ME Sampling Point: 04AAD

Investigator(s): CWF, SB Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):

Slope (%): Lat: Long: Datum:

Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?                      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present?                        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Saturation Present?                           Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): (includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>
1. Thuja occidentalis	13%	No	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  Total Number of Dominant Species Across All Strata: 3 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)
2. Abies balsamea	25%	Yes	FAC	
3. Picea rubens	13%	No	FACU	
4. Tsuga canadensis	50%	Yes	FACU	
5.				
6.				
7.				
	101%	= Total Cover		<b>Prevalence Index worksheet:</b>
<u>Sapling/Shrub Stratum</u> (Plot size: 15')				Total % Cover of: <span style="float: right;">Multiply by:</span> OBL Species <span style="float: right;">x 1 =</span> FACW Species <span style="float: right;">x 2 =</span> FAC Species <span style="float: right;">x 3 =</span> FACU Species <span style="float: right;">x 4 =</span> UPL species <span style="float: right;">x 5 =</span> Column Totals (A) <span style="float: right;">(B)</span> Prevalence Index = B/A =
1. Betula papyrifera	5%	No	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Abies balsamea	15%	No	FAC	
3. Acer rubrum	15%	No	FAC	
4. Betula populifolia	5%	No	FAC	
5. Tsuga canadensis	40%	Yes	FACU	
6.				
7.				
	80%	= Total Cover		<b>Definitions of Vegetation Strata:</b>
<u>Herb Stratum</u> (Plot size: 5')				<b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
1.				<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: 30')				
1.				
2.				
3.				
4.				
		= Total Cover		
Remarks (Include photo numbers here or on a separate sheet.):				



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Beech Wind City/County: Woodville/Penobscot Sampling Date: 05/14/2010  
 Applicant/Owner: First Wind , LLC. State: ME Sampling Point: 04AAD  
 Investigator(s): CWF, SB Section, Township, Range:  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):  
 Slope (%): Lat: Long: Datum:  
 Soil Map Unit Name: NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in remarks)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area Within a wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Moss Trim Lines (B16)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):		
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 4		
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): surface (includes capillary fringe)		
Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: 30')																				
1. Thuja occidentalis	46%	Yes	FACW	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)  Total Number of Dominant Species Across All Strata: 6 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)																
2. Abies balsamea	31%	Yes	FAC																	
3. Tsuga canadensis	23%	Yes	FACU																	
4.																				
5.																				
6.																				
7.																				
	100%	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL Species	x 1 =	FACW Species	x 2 =	FAC Species	x 3 =	FACU Species	x 4 =	UPL species	x 5 =	Column Totals	(A) (B)	Prevalence Index = B/A =	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL Species	x 1 =																			
FACW Species	x 2 =																			
FAC Species	x 3 =																			
FACU Species	x 4 =																			
UPL species	x 5 =																			
Column Totals	(A) (B)																			
Prevalence Index = B/A =																				
<b>Sapling/Shrub Stratum</b> (Plot size: 15')																				
1. Tsuga canadensis	20%	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. Abies balsamea	10%	Yes	FAC																	
3. Acer rubrum	5%	No	FAC																	
4. Betula alleghaniensis	2%	No	FAC																	
5.																				
6.																				
7.																				
	37%	= Total Cover																		
<b>Herb Stratum</b> (Plot size: 5')																				
1. Osmunda cinnamomea	20%	Yes	FACW	<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.  <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. Cornus canadensis	5%	No	FAC																	
3. Equisetum sylvaticum	1%	No	FACW																	
4. Oxalis montana	2%	No	FAC																	
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
	28%	= Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: 30')																				
1.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2.																				
3.																				
4.																				
		= Total Cover																		
Remarks (Include photo numbers here or on a separate sheet.):																				



## **Appendix C**

### **Additional Vernal Pool Data**

**Table C-1. Oakfield II Vernal Pool Survey Table -**

Vernal Pool Identifier	Associated Wetland Identifier	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses <sup>1</sup>						Presence <sup>2</sup>		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-spotted salamander		Fairy Shrimp	Other Indicator Species <sup>3</sup>	
					V1	V2	V1	V2	V1	V2			
SVP07TT_N	CHE001	x	x	x	20	0	6	54	0	0	-	-	Tadpoles at second visit
VP11MJ_M	CHE002			x	0	-	1	-	0	-	-	-	Artificial pool.
L56VP2_M	CHE003			x	15	-	1	-	0	-			Artificial pool. Part of 2007 survey for Line 56.
VP17CF_M	CHE003			x	0	-	10	-	0	-	-	-	Artificial pool.
VP03MA_M	CHE012			x	4	6	2	1	2	0			Artificial pool.
VP02MA_M	CHE011			x	0	-	6	-	0	-	-	-	Artificial pool.
VP36DD_M	CHE012			x	0	-	2	-	0	-	-	-	Artificial pool.
VP35DD_M	CHE012			x	1	-	0	-	0	-	-	-	Artificial pool.
VP08MA_M	CHE012			x	42	0	4	15	0	0	-	-	Artificial pool. Tadpoles at second visit.
VP03MA_M	CHE013			x	0	0	0	1	0	1	-	-	Artificial pool.
VP04-2MA_M	CHE013			x	1	-	4	-	0	-	-	-	Artificial pool.
VP01MA_M	CHE016			x	0	-	3	-	0	-	-	-	Artificial pool.
VP37DD_M	CHE016			x	9	-	18	-	0	-	-	-	Artificial pool.
VP06TT_N	CHE024	x		x	1	0	1	3	0	0	-	-	
VP05TT_N	CHE033	x		x	7	0	1	2	8	0	-	-	Tadpoles at second visit.
L56VP4_M	CHE028			x	18	-	20	-	0	-	-	-	Part of 2007 survey for Line 56.
L56VP5_M	CHE028			x	0	-	7	-	0	-	-	-	Artificial pool. Part of 2007 survey for Line 56.
L56VP6_M	CHE031			x	64	-	49	-	0	-	-	-	Artificial pool. Part of 2007 survey for Line 56.

<sup>1</sup> The number in the upper left corner represents the results of the first site visit, and the number in the lower right represents the results of the second site visit.

<sup>2</sup> Presence indicates observation during vernal pool survey.

<sup>3</sup> BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Vernal Pool Identifier	Associated Wetland Identifier	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses <sup>1</sup>						Presence <sup>2</sup>		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-spotted salamander		Fairy Shrimp	Other Indicator Species <sup>3</sup>	
					V1	V2	V1	V2	V1	V2			
VP39DD_M	CHE035			x	0	-	1	-	0	-	-	-	Artificial pool.
VP10MJ_M	CHE035			x	0	-	3	-	0	-	-	-	Artificial pool.
VP37DD_M	CHE035			x	1	-	0	-	0	-	-	-	Artificial pool.
L56VP7_M	CHE043			x	6	-	58	-	0	-	-	-	Part of 2007 survey for Line 56. During review of the Line 56 application this pool was determined to be man-made.
VP15CF_N	CHE050	x		x	1	0	0	0	0	0	-	-	Large pool, little activity; nearly dry at second visit
VP40DD_M	CHE052			x	0	-	16	-	0	-	-	-	Artificial pool.
L56VP8_N	CHE059	x		x	0	-	58	-	0	-	-	-	Part of 2007 survey for Line 56.
L56VPDDB_N	CHE059	x		x	2	-	7	12	0	-	-	-	Part of 2007 survey for Line 56.
VP41DD_M	CHE068			x	1	-	3	-	22	-	-	-	Artificial pool.
VP42DD_M	CHE068			x	0	-	4	-	1	-	-	-	Artificial pool.
VP43DD_M	CHE068			x	4	-	2	-	0	-	-	-	Artificial pool.
VP01MG_M	CHE075			x	3	-	37	-	125	-	-	-	Artificial pool.
VP11MA_M	CHE076			x	4	-	16	-	9	-	-	-	Artificial pool.
VP10-1MA_N	CHE081	x		x	0	0	2	3	0	0	-	-	
VP33ED_M	WOO103			x	3	-	0	-	0	-	-	-	Artificial pool.
VP34ED_M	WOO103			x	142	-	0	-	0	-	-	-	Artificial pool.
VP20CF_N	WOO108	x		x	0	0	0	6	0	0	-	-	No activity at first visit.
VP35ED_M	WOO109			x	25	-	0	-	0	-	-	-	Artificial pool.
VP124CF_M	WOO111			x	0	0*	0	10	0	0	-	-	Tadpoles observed at

<sup>1</sup> The number in the upper left corner represents the results of the first site visit, and the number in the lower right represents the results of the second site visit.

<sup>2</sup> Presence indicates observation during vernal pool survey.

<sup>3</sup> BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Vernal Pool Identifier	Associated Wetland Identifier	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses <sup>1</sup>						Presence <sup>2</sup>		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-spotted salamander		Fairy Shrimp	Other Indicator Species <sup>3</sup>	
					V1	V2	V1	V2	V1	V2			
													second visit
VP125CF_M	WOO111			x	0	1	0	19	0	0	-	-	Artificial pool.
VP126CF_M	WOO111			x	0	1	0	10	0	0	-	-	Artificial pool.
VP36ED_M	WOO123			x	2	-	0	-	0	-	-	-	Artificial pool.
VP37ED_M	WOO123			x	0	-	1	-	0	-	-	-	Artificial pool.
VP38ED_M	WOO123			x	0	-	1	-	0	-	-	-	Artificial pool.
VP39ED_M	WOO123			x	11	-	0	-	0	-	-	-	Artificial pool.
VP40ED_M	WOO123			x	2	-	3	-	0	-	-	-	Artificial pool.
VP41ED_M	WOO126			x	0	-	7	-	0	-	-	-	Artificial pool.
VP42ED_M	WOO126			x	0	-	2	-	0	-	-	-	Artificial pool.
VP43ED_M	WOO128			x	0	-	4	-	0	-	-	-	Artificial pool.
VP26ED_N	MAT155	x		x	4	3	1	1	0	0	-	-	
VP27ED_N	MAT155	x		x	0	0	5	7	2	0	-	-	
VP12MJ_M	MOL166			x	0	0	0	2	0	0	-	-	No activity at first visit
VP44DD_N	MOL166	x?		x	43	0	0	3	0	0	-	-	Pool with permanent hydrology. Masses are spread out, green frog adults
VP25ED_M	MOL177			x	0	-	2	-	0	-	-	-	Artificial pool.
VP45DD_M	MOL187			x	6	-	5	-	0	-	-	-	Artificial pool.
VP46DD_N	MOL190	x		x	0	0	5	0	0	0	-	-	No activity at second visit
VP47-2DD_M	MOL208			x	2	-	0	-	0	-	-	-	Artificial pool.
VP30DD_M	MOL209			x	0	0	0	3	0	0	-	-	Artificial pool. No activity at first visit
VP51DD_N	MOL212	x		x	0	0	3	2	0	0	-	-	
VP50DD_M	MOL214			x	0	-	12	-	0	-	-	-	Artificial pool.
VP49DD_M	MOL214			x	0	-	31	-	0	-	-	-	Artificial pool.
VP36CF_M	MOL215			x	0	-	3	-	0	-	-	-	Artificial pool.

<sup>1</sup> The number in the upper left corner represents the results of the first site visit, and the number in the lower right represents the results of the second site visit.

<sup>2</sup> Presence indicates observation during vernal pool survey.

<sup>3</sup> BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Vernal Pool Identifier	Associated Wetland Identifier	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses <sup>1</sup>						Presence <sup>2</sup>		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-spotted salamander		Fairy Shrimp	Other Indicator Species <sup>3</sup>	
					V1	V2	V1	V2	V1	V2			
VP35CF_M	MOL215			x	0	-	26	-	0	-	-	-	Artificial pool.
VP06AA_M	MAC229			x	1	-	0	-	0	-	-	-	Artificial pool.
SVP100CFM_N	MAC233	x	x	x	0	0	0	80	0	38	-	-	
SVP09TT_N	MAC234	x	x	x	54	0*	29	36	46	36	-	-	Tadpoles at second visit
SVP10TT_N	MAC235	x	x	x	1	0	11	50	2	24	-	-	Tadpoles observed at second visit. Less than half of the pool is inside the corridor; entire pool surveyed at second visit.
VP64AA_N	MAC238	x		x	0	0	9	9	0	0	-	-	
VP63AA_M	MAC254			x	0	-	8	-	0	-	-	-	Artificial pool.
VP23-2MA_N	MAC254	x		x	0	0	0	12	0	0	-	-	No activity at first visit, PEM wetland
SVP24-1MA_N	MAC255	x	x	x	80	0*	57	56	0	0	-	-	Tadpoles observed at second visit
VP24-2MA_N	MAC259	x		x	0	0	0	1	0	0	-	-	No activity at first visit, shallow
VP25MA_N	MAC261	x		x	0	0	0	2	0	0	-	-	No activity at first visit
VP01MJ_N	MAC264	x		x	0	0	4	6	0	0	-	-	
SVP62AA_N	MAC264	x	x	x	1	1	53	46	1	1	-	-	
VP61AA_N	MAC264	x		x	1	0	12	10	0	0	-	-	
VP60AA_N	MAC264	x		x	7	0	15	15	0	0	-	-	
VP02MJ_N	MAC265	x		x	0	0	3	0	0	0	-	-	
VP58AA_N	MAC265	x		x	0	0	8	6	0	0	-	-	
SVP59AA_N	MAC265	x	x	x	0	0	20	18	0	0	-	-	
VP57AA_N	NYA266	x		x	0	0	2	1	0	0	-	-	
VP27MA_M	NYA272			x	0	-	10	-	0	-	-	-	Artificial pool.

<sup>1</sup> The number in the upper left corner represents the results of the first site visit, and the number in the lower right represents the results of the second site visit.

<sup>2</sup> Presence indicates observation during vernal pool survey.

<sup>3</sup> BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Vernal Pool Identifier	Associated Wetland Identifier	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses <sup>1</sup>						Presence <sup>2</sup>		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-spotted salamander		Fairy Shrimp	Other Indicator Species <sup>3</sup>	
					V1	V2	V1	V2	V1	V2			
VP32ED_M	NYA284			x	6	-	17	-	0	-	-	-	Artificial pool.
VP56AA_M	NYA287			x	0	-	5	-	0	-	-	-	Artificial pool.
VP05MJ_M	NYA290			x	15	-	63	-	5	-	-	-	Artificial pool.
VP55AA_M	NYA290			x	0	-	9	-	0	-	-	-	Artificial pool.
VP06-1MJ_M	NYA290			x	0	-	29	-	0	-	-	-	Artificial pool.
VP54AA_M	NYA291			x	0	-	3	-	0	-	-	-	Artificial pool.
VP06-2MJ_M	NYA295			x	15	-	57	-	19	-	-	-	Artificial pool.
VP41-1ED_N	REE296	x		x	0	0	7	9	0	0	-	-	
VP42-1ED_N	REE296	x		x	0	0	3	3	0	0	-	-	
VP50AA_M	REE310			x	0	-	10	-	0	-	-	-	Artificial pool.
VP51AA_M	REE309			x	0	-	6	-	0	-	-	-	Artificial pool.
VP52AA_M	REE311			x	0	-	10	-	0	-	-	-	Artificial pool.
VP53AA_M	REE311			x	10	-	5	-	0	-	-	-	Artificial pool.
VP02AA_M	REE317			x	0	0	0	4	0	0	-	-	Artificial pool.
VP115SM_M	REE324			x	7	-	66	-	3	-	-	-	Artificial pool.
VP19DD_M	GLE330			x	57	-	16	-	0	-	-	-	Artificial pool.
VP20DD_M	GLE335			x	13	-	52	-	30	-	-	-	Artificial pool.
VP53DD_N	GLE336	x		x	0	0	2	3	0	0	-	-	
VP54DD_N	GLE336	x		x	10	0*	4	5	0	0	-	-	Tadpoles observed at second visit
VP21DD_M	GLE342			x	0	-	2	-	0	-	-	-	Artificial pool. Observed two groups of new spermatophores at first visit
VP22DD_M	GLE343			x	0	-	2	-	0	-	-	-	Artificial pool.
VP55DD_M	GLE343			x	0	-	1	-	3	-	-	-	Artificial pool. Extension of same rut as VP22D_M

<sup>1</sup> The number in the upper left corner represents the results of the first site visit, and the number in the lower right represents the results of the second site visit.

<sup>2</sup> Presence indicates observation during vernal pool survey.

<sup>3</sup> BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Vernal Pool Identifier	Associated Wetland Identifier	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses <sup>1</sup>						Presence <sup>2</sup>		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-spotted salamander		Fairy Shrimp	Other Indicator Species <sup>3</sup>	
					V1	V2	V1	V2	V1	V2			
SVP23DD_N	GLE352	x	x	x	0	0	33	4	0	2	-	-	Small clump of dissipating masses outside corridor; pool/wetland has been cut; water level significantly lower at 2 <sup>nd</sup> visit thus fewer egg masses at 2 <sup>nd</sup> visit
VP56DD_N	GLE357	x		x	2	1*	0	2	0	0	-	-	Tadpoles observed at second visit
SVP65AA_N	GLE363	x	x	x	38	0*	67	81	38	13	-	-	Tadpoles observed at second visit
VP66AA_M	GLE364			x	0	-	4	-	0	-	-	-	Artificial pool.
VP53ED_M	GLE378			x	1	-	10	-	0	-	-	-	Artificial pool.
VP54ED_M	GLE377			x	42	-	20	-	0	-	-	-	Artificial pool.
VP52ED_M	GLE385			x	2	-	2	-	0	-	-	-	Artificial pool.
VP35ED_M	GLE387			x	0	-	4	-	0	-	-	-	Artificial pool.
VP50ED_N	GLE389	x		x	29	0*	1	4	0	0	-	-	Pool modified by previous forestry activity.
VP50ED_M	GLE390	x		x	1	-	0	-	0	-	-	-	Tadpoles observed at second visit
VP49ED_M	GLE391			x	0	-	1	-	0	-	-	-	Artificial pool.
VP12TT_M	GLE395			x	0	0	0	1	0	0	-	-	Artificial pool.
VP48ED_M	GLE395			x	4	-	23	-	0	-	-	-	Artificial pool.
SVP46ED_N	GLE400	x	x	x	0	0	28	44	0	0	-	-	32 egg masses out of water at second visit.
VP47ED_N	T3R3401	x		x	0	0	4	3	0	0	-	-	
VP45ED_N	T3R404	x		x	0	0	6	8	0	0	-	-	

<sup>1</sup> The number in the upper left corner represents the results of the first site visit, and the number in the lower right represents the results of the second site visit.

<sup>2</sup> Presence indicates observation during vernal pool survey.

<sup>3</sup> BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Vernal Pool Identifier	Associated Wetland Identifier	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses <sup>1</sup>						Presence <sup>2</sup>		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-spotted salamander		Fairy Shrimp	Other Indicator Species <sup>3</sup>	
					V1	V2	V1	V2	V1	V2			
VP122CF_M	T3R247			x	0	-	6	-	0	-	-	-	Artificial pool.
VP31CF_M	T4R437			x	6	-	2	-	1	-	-	-	Artificial pool.
VP121CF_M	T4R440			x	8	-	1	-	0	-	-	-	Artificial pool.
VP32CF_M	T4R444			x	5	-	15	-	0	-	-	-	Artificial pool.
VP120CF_M	T4R458			x	3	-	8	-	0	-	-	-	Artificial pool.
VP44ED_M	T3R413			x	10	-	46	-	0	-	-	-	Artificial pool.
VP114CF_M	LIN459			x	0	-	8	-	0	-	-	-	Artificial pool.
VP113CF_M	LIN459			x	0	-	9	-	0	-	-	-	Artificial pool.
VP112CF_M	LIN468			x	10	-	3	-	0	-	-	-	Artificial pool.
VP111CF_M	LIN468			x	13	-	0	-	0	-	-	-	Artificial pool.
VP110CF_M	LIN468			x	15	-	4	-	0	-	-	-	Artificial pool.
VP109CF_M	LIN468			x	14	-	4	-	0	-	-	-	Artificial pool.
VP108CF_M	LIN472			x	21	-	2	-	0	-	-	-	Artificial pool.
VP47-1DD_N	OAK481			x	0	0	7	5	0	0			
VP27SD_N	OAK481			x	10	0	4	6	0	0	-	-	Modified by entry trail for harvester
VP25BE_M	GLE325			x	2	-	0	-	0	-	-	-	Artificial pool
VP52DD_N	MAC232	x?	x?	x	3	-	36	-	0	-	-	-	Permanent hydrology

<sup>1</sup> The number in the upper left corner represents the results of the first site visit, and the number in the lower right represents the results of the second site visit.

<sup>2</sup> Presence indicates observation during vernal pool survey.

<sup>3</sup> BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

## **Appendix D**

### **Significant Vernal Pool Data Forms**

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd.      **Pool ID:** 10TT

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable: Danielle Dyer, Charles Ferris Phone or Email (207)729-1199)

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted     Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes     No    Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC      Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500      City: Boston      State: MA      Zip 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC235 approximately 2,000 feet south of Molunkus Stream and U.S. Route 2

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes     No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression       Pool associated with larger wetland complex  
 Floodplain Depression       Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland       Wet meadow       Slow stream  
 Shrub wetland       Shallow pond       Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)       Abandoned beaver flowage       Headwater seepage  
 Emergent marsh       Active beaver flowage       Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)       Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)       Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)       Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)       Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**     **Natural-Modified**     **Non-Natural**     **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 10TT

### Hydrology

- Approximate size of pool (at max. capacity): Width 30  m  ft (check one) Length 60  m  ft (check one)
- Maximum depth at time of survey: 2  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) lack of aquatic veg, surrounding topography suggest semi-permanent
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/13/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/21/2010	05/13/2010	04/21/2010	05/13/2010	04/21/2010	05/13/2010	04/21/2010	05/13/2010		05/13/2010		05/13/2010
Wood frog		1	0	S	NA	3	NA	A,H	NA		S		3
Spotted Salamander		11	50	S	S,H	3	3	M	A		NA		NA
Blue-spotted Salamander		2	24	S	S,H	3	3	M	A		NA		NA
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted:
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments first visit surveyed only area of pool within project area boundary, second visit surveyed entire pool including area outside of project area

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature:  Danielle Dyer  Date  6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 10MA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted    Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes    No   Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Chester, Maine

Brief site directions to the pool (using mapped landmarks): In wetland CHE81 approximately 500 feet NE of unnamed road located east of Ebhorse Stream

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes    No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression       Pool associated with larger wetland complex

Floodplain Depression       Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland       Wet meadow       Slow stream

Shrub wetland       Shallow pond       Floodplain overflow / Oxbow

Peatland (acidic fen or bog)       Abandoned beaver flowage       Headwater seepage

Emergent marsh       Active beaver flowage       Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss,       Sphagnum moss (anchored or suspended)

lycopodium spp.)       Wet site ferns (e.g. royal fern, marsh fern)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)       Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)       Aquatic vascular spp. (e.g. pickerweed, arrowhead)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris,       Floating or submerged aquatics (e.g. water lily, water shield, pond swamp candle)      weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**       **Natural-Modified**       **Non-Natural**       **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 10MA

#### Hydrology

• Approximate size of pool (at max. capacity): Width 2  m  ft (check one) Length 40  m  ft (check one)

• Maximum depth at time of survey: 15  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

#### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/19/2010, 5/12/2010

#### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/19/2010	05/12/2010	04/19/2010	05/12/2010	04/19/2010	05/12/2010	04/19/2010	05/12/2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		2	3	S	S	3	3	M	M		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 09TT

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted    Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes    No   Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC      Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500      City: Boston      State: MA      Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwhoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC234 approximately 2,000 feet south of Molunkus Stream and U.S. Route 2

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes    No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression       Pool associated with larger wetland complex  
 Floodplain Depression       Other: Isolated wetland depression

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland       Wet meadow       Slow stream  
 Shrub wetland       Shallow pond       Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)       Abandoned beaver flowage       Headwater seepage  
 Emergent marsh       Active beaver flowage       Other:

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)       Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)       Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)       Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)       Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**       **Natural-Modified**       **Non-Natural**       **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

**Pool ID: 09TT**

#### Hydrology

• Approximate size of pool (at max. capacity): Width 50  m  ft (check one) Length 110  m  ft (check one)

• Maximum depth at time of survey: 24  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

#### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 5/12/2010

#### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010		
Wood frog		54	0	S	S	3	S	M	H		
Spotted Salamander		29	36	S	S	3	3	M	A		
Blue-spotted Salamander		45	36	S	S	3	3	M	A		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: During second visits, no wood frog egg masses were observed, but several tadpoles were seen.

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant
- Potentially significant but lacking critical data
- Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 07TT

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable: Danielle Dyer, Charles Ferris Phone or Email (207)729-1199)

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted     Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes     No    Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Chester, Maine

Brief site directions to the pool (using mapped landmarks): In wetland CHE001 approximately 1,000 feet north of Keene Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes     No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression                       Pool associated with larger wetland complex  
 Floodplain Depression                               Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Forested wetland             | <input type="checkbox"/> Wet meadow               | <input type="checkbox"/> Slow stream                 |
| <input checked="" type="checkbox"/> Shrub wetland     | <input type="checkbox"/> Shallow pond             | <input type="checkbox"/> Floodplain overflow / Oxbow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage           |
| <input type="checkbox"/> Emergent marsh               | <input type="checkbox"/> Active beaver flowage    | <input type="checkbox"/> Other:                      |

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)                        | <input type="checkbox"/> Sphagnum moss (anchored or suspended)  |
| <input type="checkbox"/> Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)                      | <input checked="" type="checkbox"/> Wet site ferns (e.g. royal fern, marsh fern)                                |
| <input checked="" type="checkbox"/> Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)            | <input type="checkbox"/> Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)                    |
| <input checked="" type="checkbox"/> Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) | <input type="checkbox"/> Aquatic vascular spp. (e.g. pickerelweed, arrowhead)                                   |
|   | <input type="checkbox"/> Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort) |

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**       **Natural-Modified**       **Non-Natural**       **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): pool was driven through at some point in the past, ruts evident

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

**Pool ID: 07TT**

#### Hydrology

• Approximate size of pool (at max. capacity): Width 30  m  ft (check one) Length 100  m  ft (check one)

• Maximum depth at time of survey: 2.5  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) lack of aquatic veg, woody species composition and surrounding topography suggest semi-permanent

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

#### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: water boatmen, log cabin caddisfly larvae, mosquito larvae \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/12/2010, 05/10/2010

#### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae		
	Information:	#		VM*		CL**		EMI***		VM*		CL**
	Date:	04/12/2010	05/10/2010	04/12/2010	05/10/2010	04/12/2010	05/10/2010	04/12/2010	05/10/2010		05/10/2010	05/10/2010
Wood frog		20	0	S	NA	3	NA	A	NA		S	3
Spotted Salamander		6	54	S	S,H	3	3	M	A		NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		NA	NA
Fairy Shrimp												

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted:

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/ #: Oakfield Amendment

Organization Name: Stantec Consulting Ltd. Pool ID: 06TT

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable: Danielle Dyer, Charles Ferris Phone or Email (207)729-1199)

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

## Landowner Contact Information

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

## 1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant (include notes in section 3d on Page 2)	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes: _____

## 2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Chester, Maine

Brief site directions to the pool (using mapped landmarks): In wetland CHE024 approximately 500 feet NE of Medunkeunk Stream

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

## 3. VERNAL POOL SURVEY INFORMATION

### a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression

Pool associated with larger wetland complex

Floodplain Depression

Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland

Wet meadow

Slow stream

Shrub wetland

Shallow pond

Floodplain overflow / Oxbow

Peatland (acidic fen or bog)

Abandoned beaver flowage

Headwater seepage

Emergent marsh

Active beaver flowage

Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)

Sphagnum moss (anchored or suspended)

Wet site ferns (e.g. royal fern, marsh fern)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)

Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)

Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

### b. Vernal Pool Origin or Impacts

i. Pool's Origin:  Natural  Natural-Modified  Non-Natural  Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No evidence of anthropogenic disturbance

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

**Pool ID: 06TT**

#### Hydrology

• Approximate size of pool (at max. capacity): Width 20  m  ft (check one) Length 70  m  ft (check one)

• Maximum depth at time of survey: 15  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) \beaver chews floating in pool

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other:

#### Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/13/2010, 05/10/2010

#### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/13/2010	05/10/2010	04/13/2010	05/10/2010	04/13/2010	05/10/2010	04/13/2010	05/10/2010		05/10/2010		05/10/2010
Wood frog		1	0	S	NA	3	NA	A	NA		NA		NA
Spotted Salamander		1	3	S	S,H	3	3	M	A		NA		NA
Blue-spotted Salamander		NA	NA	NA	NA	NA	NA	NA	NA		NA		NA
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted:

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 05TT

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable: Danielle Dyer, Charles Ferris Phone or Email (207)729-1199)

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted    Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes    No   Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Chester, Maine

Brief site directions to the pool (using mapped landmarks): In wetland CHE033, ~1,500 feet NE of Medunkeunk Stream

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes    No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression       Pool associated with larger wetland complex  
 Floodplain Depression       Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Forested wetland             | <input type="checkbox"/> Wet meadow               | <input type="checkbox"/> Slow stream                 |
| <input checked="" type="checkbox"/> Shrub wetland     | <input type="checkbox"/> Shallow pond             | <input type="checkbox"/> Floodplain overflow / Oxbow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage           |
| <input type="checkbox"/> Emergent marsh               | <input type="checkbox"/> Active beaver flowage    | <input type="checkbox"/> Other:                      |

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)                        | <input checked="" type="checkbox"/> Sphagnum moss (anchored or suspended)                                       |
| <input type="checkbox"/> Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)                      | <input checked="" type="checkbox"/> Wet site ferns (e.g. royal fern, marsh fern)                                |
| <input checked="" type="checkbox"/> Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)            | <input type="checkbox"/> Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)                    |
| <input checked="" type="checkbox"/> Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) | <input type="checkbox"/> Aquatic vascular spp. (e.g. pickerelweed, arrowhead)                                   |
|   | <input type="checkbox"/> Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort) |

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**    **Natural-Modified**    **Non-Natural**    **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): Timber harvesting occurred adjacent to and within pool, skidder has driven through pool

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

**Pool ID: 05TT**

#### Hydrology

- Approximate size of pool (at max. capacity): Width 200  m  ft (check one) Length 75  m  ft (check one)
- Maximum depth at time of survey: 36  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) \beaver chews floating in pool, extensive drydown between visits suggest semi-permanent
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other:

#### Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/13/2010, 05/10/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/13/2010	05/10/2010	04/13/2010	05/10/2010	04/13/2010	05/10/2010	04/13/2010	05/10/2010		05/10/2010		05/10/2010
Wood frog		7	0	S	NA	3	NA	A	NA		S		3
Spotted Salamander		1	2	S	S,H	3	3	M	A		NA		NA
Blue-spotted Salamander		8	0	S	S	NA	NA	M	NA		NA		NA
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted:
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

**d. General Comments** pool dimensions were 200 feet by 75 feet by 3 feet in depth at first visit and had dried to 25 by 30 by 1 foot deep at second visit

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

#### For MDIF&W Use Only:

This pool is: Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

- Significant**  **Potentially significant but lacking critical data**  **Not significant** due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 02MJ

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : , Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information** Landowner permission obtained for this survey & submission:  Yes  No Notes:

Landowner contact information (REQUIRED): Name: Maine GenLead, LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

## 1. OBSERVER RECOMMENDATION

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

## 2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC265 just west of Macwahoc Plantation/North Yarmouth Academy Grant TWP line

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

## 3. VERNAL POOL SURVEY INFORMATION

### a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other:

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

### b. Vernal Pool Origin or Impacts

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.



# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 15CF

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email  (207) 729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted    Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes    No   Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC      Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500      City: Boston      State: MA      Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Chester, Maine

Brief site directions to the pool (using mapped landmarks): In wetland CHE050 approximately 5,000 feet SW of Route 16

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes    No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression       Pool associated with larger wetland complex  
 Floodplain Depression       Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland       Wet meadow       Slow stream  
 Shrub wetland       Shallow pond       Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)       Abandoned beaver flowage       Headwater seepage  
 Emergent marsh       Active beaver flowage       Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)       Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)       Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)       Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)       Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**       **Natural-Modified**       **Non-Natural**       **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 15CF

#### Hydrology

- Approximate size of pool (at max. capacity): Width 30  m  ft (check one) Length 30  m  ft (check one)
- Maximum depth at time of survey: 10  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/14/2010, 5/11/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/14/2010	05/11/2010	04/14/2010	05/11/2010	04/14/2010	05/11/2010	04/14/2010	05/11/2010		
Wood frog		1	0	S	NA	3	NA	M	NA		
Spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments: Pool very dry on second visit, 3 inches water at maximum depth.

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: \_\_Danielle Dyer\_\_ Date \_6/30/2010\_

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 25MA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable: Audie Arbo, Charles Ferris Phone or Email (207)729-1199)

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC261 approximately 3,200 feet SW of North Yarmouth Academy Grant TWP/Macwahoc Plt line

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*:Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss,  Sphagnum moss (anchored or suspended)

lycopodium spp.)  Wet site ferns (e.g. royal fern, marsh fern)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris,  Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 25MA

#### Hydrology

- Approximate size of pool (at max. capacity): Width 10  m  ft (check one) Length 10  m  ft (check one)
- Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years)
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: Spring peepers calling

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/13/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/21/2010	05/13/2010	04/21/2010	05/13/2010	04/21/2010	05/13/2010	04/21/2010	05/13/2010				
Wood frog		0	0	NA	NA	NA	NA	NA	NA				
Spotted Salamander		0	2	NA	S	NA	3	NA	M				
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted:
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 24-1MA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable: Audie Arbo, Charles Ferris Phone or Email (207)729-1199)

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC255 approximately 1,500 feet west of Macwahoc Stream

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression       Pool associated with larger wetland complex  
 Floodplain Depression       Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Forested wetland             | <input type="checkbox"/> Wet meadow               | <input type="checkbox"/> Slow stream                 |
| <input checked="" type="checkbox"/> Shrub wetland     | <input type="checkbox"/> Shallow pond             | <input type="checkbox"/> Floodplain overflow / Oxbow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage           |
| <input type="checkbox"/> Emergent marsh               | <input type="checkbox"/> Active beaver flowage    | <input type="checkbox"/> Other:                      |

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)                        | <input checked="" type="checkbox"/> Sphagnum moss (anchored or suspended)                                       |
| <input type="checkbox"/> Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)                      | <input checked="" type="checkbox"/> Wet site ferns (e.g. royal fern, marsh fern)                                |
| <input checked="" type="checkbox"/> Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)            | <input checked="" type="checkbox"/> Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)         |
| <input checked="" type="checkbox"/> Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) | <input type="checkbox"/> Aquatic vascular spp. (e.g. pickerelweed, arrowhead)                                   |
|   | <input type="checkbox"/> Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort) |

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**       **Natural-Modified**       **Non-Natural**       **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 24-1MA

### Hydrology

- Approximate size of pool (at max. capacity): Width 50  m  ft (check one) Length 100  m  ft (check one)
- Maximum depth at time of survey: 3  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years)
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: Spring peepers calling

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/13/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/21/2010	05/13/2010	04/21/2010	05/13/2010	04/21/2010	05/13/2010	04/21/2010	05/13/2010		05/13/2010		05/13/2010
Wood frog		80	0	S	S	3	3	A,H	H		S		3
Spotted Salamander		57	56	S	S	3	3	M	A		NA		NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted:
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: During second visits, wood frog tadpoles were observed but no egg mass counts were recorded.

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd.      **Pool ID:** 24-2MA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable: Audie Arbo, Charles Ferris Phone or Email (207)729-1199)

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted     Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes     No    Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC    Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500    City: Boston    State: MA    Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland C259 approximately 500 feet NE of Macwahoc Stream

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes     No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression                       Pool associated with larger wetland complex  
 Floodplain Depression                               Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- |   |   |  |
|---|---|--|
| <input checked="" type="checkbox"/> Forested wetland  | <input type="checkbox"/> Wet meadow               | <input type="checkbox"/> Slow stream                 |
| <input checked="" type="checkbox"/> Shrub wetland     | <input type="checkbox"/> Shallow pond             | <input type="checkbox"/> Floodplain overflow / Oxbow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage           |
| <input type="checkbox"/> Emergent marsh               | <input type="checkbox"/> Active beaver flowage    | <input type="checkbox"/> Other:                      |

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)                        | <input checked="" type="checkbox"/> Sphagnum moss (anchored or suspended)                                       |
| <input type="checkbox"/> Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)                      | <input checked="" type="checkbox"/> Wet site ferns (e.g. royal fern, marsh fern)                                |
| <input checked="" type="checkbox"/> Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)            | <input checked="" type="checkbox"/> Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)         |
| <input checked="" type="checkbox"/> Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) | <input type="checkbox"/> Aquatic vascular spp. (e.g. pickerelweed, arrowhead)                                   |
|   | <input type="checkbox"/> Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort) |

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**     **Natural-Modified**     **Non-Natural**     **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 24-2MA

#### Hydrology

- Approximate size of pool (at max. capacity): Width 20  m  ft (check one) Length 20  m  ft (check one)
- Maximum depth at time of survey: 15  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years)
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: Spring peepers calling

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/13/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/21/2010	05/13/2010	04/21/2010	05/13/2010	04/21/2010	05/13/2010	04/21/2010	05/13/2010				
Wood frog		0	0	NA	NA	NA	NA	NA	NA				
Spotted Salamander		0	1	NA	S	NA	3	NA	M				
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted:
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 23DD

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Glenwood, Maine

Brief site directions to the pool (using mapped landmarks): In wetland GLE352 approximately 1.200 feet SW of Glenwood Pt/Haynesville town line

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: **Isolated wetland depression** \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

**Pool ID: 23DD**

#### Hydrology

• Approximate size of pool (at max. capacity): Width 20  m  ft (check one) Length 20  m  ft (check one)

• Maximum depth at time of survey: 10  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

#### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/20/2010, 05/12/10

#### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010		05/12/2010		05/12/2010
Wood frog		4	0	S	S	3	3	A	H		H		3
Spotted Salamander		33	4	S	S	3	3	M	M		NA		NA
Blue-spotted Salamander		0	2	NA	S	NA	3	NA	M				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: The maximum water depth during second visits had dropped to 6 inches.

Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol

Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401

Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)

Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 23-2MA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Charles Ferris Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 2111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC254 located approximately 3,000 feet west of Macwahoc Stream

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression       Pool associated with larger wetland complex

Floodplain Depression       Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland       Wet meadow       Slow stream

Shrub wetland       Shallow pond       Floodplain overflow / Oxbow

Peatland (acidic fen or bog)       Abandoned beaver flowage       Headwater seepage

Emergent marsh       Active beaver flowage       Other:

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)       Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)       Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)       Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)       Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**       **Natural-Modified**       **Non-Natural**       **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### Hydrology

- Approximate size of pool (at max. capacity): Width 2  m  ft (check one) Length 2  m  ft (check one)
- Maximum depth at time of survey: 5  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years)
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/22/2010, 5/13/10

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/22/2010	05/13/2010	04/22/2010	05/13/2010	04/22/2010	05/13/2010	04/22/2010	05/13/2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		0	12	NA	S,H	NA	3	NA	M		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Charles Ferris Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 20CF

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Charles Ferris Phone or Email  (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 2111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Woodville, Maine

Brief site directions to the pool (using mapped landmarks): In wetland WO018 approximately 1,500 feet N of Chester/Woodville town line

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression       Pool associated with larger wetland complex  
 Floodplain Depression       Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland       Wet meadow       Slow stream  
 Shrub wetland       Shallow pond       Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)       Abandoned beaver flowage       Headwater seepage  
 Emergent marsh       Active beaver flowage       Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)       Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)       Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)       Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)       Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**       **Natural-Modified**       **Non-Natural**       **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 20CF

#### Hydrology

• Approximate size of pool (at max. capacity): Width 20  m  ft (check one) Length 60  m  ft (check one)

• Maximum depth at time of survey: 8  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

#### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/22/2010, 05/11/10

#### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/22/2010	05/11/2010	04/22/2010	05/11/2010	04/22/2010	05/11/2010	04/22/2010	05/11/2010				
Wood frog		0	0	NA	NA	NA	NA	NA	NA				
Spotted Salamander		0	6	NA	S	NA	3	NA	M				
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol

Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401

Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)

Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Charles Ferris Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 26ED

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Mattawamkeag, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAT155 approximately 500 feet east of Medway Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression       Pool associated with larger wetland complex  
 Floodplain Depression       Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland       Wet meadow       Slow stream  
 Shrub wetland       Shallow pond       Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)       Abandoned beaver flowage       Headwater seepage  
 Emergent marsh       Active beaver flowage       Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)       Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)       Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)       Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)       Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**       **Natural-Modified**       **Non-Natural**       **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 26ED

#### Hydrology

- Approximate size of pool (at max. capacity): Width 15  m  ft (check one) Length 20  m  ft (check one)
- Maximum depth at time of survey: 10  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/20/2010, 5/12/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010		
Wood frog		4	3	S	S	3	3	M	M		
Spotted Salamander		1	1	S	S	3	3	M	M		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments: Pool was completely covered with Algae on 05/12/2010, making egg mass location difficult

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 46DD

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Molunkus Twp, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MOL190 approximately 500 feet NE of unnamed road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

**i. Choose the best descriptor for the physical setting:**

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

**ii. Check all palustrine types that best apply to this pool or wetland:**

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

**iii. Predominate substrate in order of increasing hydroperiod:**

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

**iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):**

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

**i. Pool's Origin:**  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 46DD

### Hydrology

- Approximate size of pool (at max. capacity): Width 6  m  ft (check one) Length 6  m  ft (check one)
- Maximum depth at time of survey: 6  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/20/2010, 5/12/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010				
Wood frog		0	0	NA	NA	NA	NA	NA	NA				
Spotted Salamander		5	0	S	NA	3	NA	M	NA				
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 45ED

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Eric Doucette, Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: T3 R4 WELS, Maine

Brief site directions to the pool (using mapped landmarks): In wetland T3R4-404 approximately 200 feet north of Beaver Brook

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

Pool and wetland was likely created or augmented by river overflow action

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 45ED

### Hydrology

- Approximate size of pool (at max. capacity): Width 40  m  ft (check one) Length 75  m  ft (check one)
- Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) Occasional aquatic veg in deeper portions
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/26/2010, 05/11/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/26/2010	05/11/2010	04/26/2010	05/11/2010	04/26/2010	05/11/2010	04/26/2010	05/11/2010				
Wood frog		0	0	NA	NA	NA	NA	NA	NA				
Spotted Salamander		6	8	S,H	S	3	3	M	A				
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Eric Doucette Date 06/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 44DD

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Molunkus Twp, Maine

Brief site directions to the pool (using mapped landmarks): \_\_\_\_\_ within 1000ft from existing carriage path \_\_\_\_\_

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 44DD

### Hydrology

- Approximate size of pool (at max. capacity): Width 15  m  ft (check one) Length 15  m  ft (check one)
- Maximum depth at time of survey: 8  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/20/2010, 5/12/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010		05/12/2010		05/12/2010
Wood frog		43	0	S	S	3	3	M	H		F		3
Spotted Salamander		0	3	S	S	3	3	NA	M		NA		NA
Blue-spotted Salamander		0	0	S	S	3	3	NA	NA		NA		NA
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: During second visits, no wood frog egg masses were observed, but several tadpoles were seen.

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 42ED

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : , Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Reed Pit, Maine

Brief site directions to the pool (using mapped landmarks): In wetland REE296 approximately 3,500 feet NE of North Yarmouth Academy Grant TWP/Reed Pit line

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss,  Sphagnum moss (anchored or suspended)

lycopodium spp.)  Wet site ferns (e.g. royal fern, marsh fern)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris,  Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 42ED

### Hydrology

• Approximate size of pool (at max. capacity): Width 30  m  ft (check one) Length 35  m  ft (check one)

• Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/20/2010, 05/12/2010

### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		3	3	S	S	3	3	M	M		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments:

\_\_\_\_\_

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 41ED

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : , Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Reed Pt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland REE296 approximately 3,500 feet NE of North Yarmouth Academy Grant TWP/Reed Pt line

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression       Pool associated with larger wetland complex

Floodplain Depression       Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland       Wet meadow       Slow stream

Shrub wetland       Shallow pond       Floodplain overflow / Oxbow

Peatland (acidic fen or bog)       Abandoned beaver flowage       Headwater seepage

Emergent marsh       Active beaver flowage       Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss,       Sphagnum moss (anchored or suspended)

lycopodium spp.)       Wet site ferns (e.g. royal fern, marsh fern)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)       Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)       Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris,       Floating or submerged aquatics (e.g. water lily, water shield, pond swamp candle)      weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**       **Natural-Modified**       **Non-Natural**       **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

**Pool ID: 41ED**

#### Hydrology

• Approximate size of pool (at max. capacity): Width 30  m  ft (check one) Length 70  m  ft (check one)

• Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/20/2010, 05/12/2010

#### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010				
Wood frog		0	0	NA	NA	NA	NA	NA	NA				
Spotted Salamander		7	9	S	S	3	3	M	M				
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: Maximum water depth at second visit was 3 inches.

Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol

Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401

Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)

Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment      **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 27SD

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted    Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes    No   Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC   Phone: \_\_\_\_\_

Street Address: 179 Lincoln LLC   City: Boston   State: MA   Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Oakfield, Maine

Brief site directions to the pool (using mapped landmarks): \_\_\_\_\_ within 1000ft from existing carriage path \_\_\_\_\_

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT   Mapping grade GPS with post processed corrections:  Yes    No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

**i.** Choose the best descriptor for the physical setting:

- Isolated Upland Depression       Pool associated with larger wetland complex  
 Floodplain Depression       Other \_\_\_\_\_

**ii.** Check all palustrine types that best apply to this pool or wetland:

- Forested wetland       Wet meadow       Slow stream  
 Shrub wetland       Shallow pond       Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)       Abandoned beaver flowage       Headwater seepage  
 Emergent marsh       Active beaver flowage       Other: \_\_\_\_\_

**iii.** Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

**iv.** Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)       Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)       Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)       Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)       Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

**i. Pool's Origin:**    Natural       Natural-Modified       Non-Natural       Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): Some ruts near pool, possibility of altered hydrology.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 27SD

### Hydrology

• Approximate size of pool (at max. capacity): Width 12  m  ft (check one) Length 30  m  ft (check one)

• Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 05/27/2009, 6/09/2009

### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	05/27/2009	06/09/2009	05/27/2009	06/09/2009	05/27/2009	06/09/2009	05/27/2009	06/09/2009		06/09/2009		06/09/2009
Wood frog		10	0	S,H,P	S,H	2	3	M	H		S		3
Spotted Salamander		4	6	S,H,P	S,H	3	3	M	A		NA		NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: During second visits, no wood frog egg masses were observed, but several tadpoles were seen.

Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol

Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401

Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)

Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

For MDIF&W Use Only: Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

## Significant Vernal Pool Data Collection Form

Project: Oakfield Amendment

Survey Date (1<sup>st</sup>): 5/27/09

Town/County: Oakfield

Surveyor's Initials (1<sup>st</sup>): SPD

Associated Wetland ID (if applicable): OAK481

Survey Date (2<sup>nd</sup>): 6/09/09

Vernal Pool ID: 027SD

Surveyor's Initials (2<sup>nd</sup>): SPD

**VERNAL POOL SURVEY INFORMATION:** Is this pool?:  SVP or  VP

**Photos:\***

\*Number and Location

**Wetland Habitat Characterization:**

- **Choose the best descriptor for the physical setting**

Isolated Wetland Depression       Pool associated with larger wetland complex  
 Isolated Upland Depression       Floodplain Depression  
 Other: \_\_\_\_\_

- **Check all wetland types that best apply to this pool:**

Forested swamp       Wet meadow       Slow stream  
 Shrub swamp       Shallow pond       Floodplain overflow  
 Peatland (fen or bog)       Abandoned beaver flowage       Headwater seepage  
 Emergent marsh       Active beaver flowage       Other: \_\_\_\_\_

**Vernal Pool Status under the Natural Resources Protection Act (NRPA)**

**Natural Origin**

- **Select the pool's origin:**

Natural       Natural-Modified       Unnatural       Unknown

If modified, unnatural or unknown, describe any modern or historic impacts to the wetland:  
Natural pool with harvester entry trail

**Hydrology**

- **Select the pool's estimated hydroperiod AND provide rationale for opinion:**

Permanent       Semi-permanent       Ephemeral       Unknown

Semi-permanent: drying partially in all years and completely in drought years  
Ephemeral: drying out during the growing season in most years

- **Maximum depth at survey:**

Visit 1:  0-12"       12-36"       36-60"       >60"  
Visit 2:  0-12"       12-36"       36-60"       >60"

- **Approximate size of pool (at spring highwater):**

Width: 12 \_\_\_\_\_ ft.      Length: 30 \_\_\_\_\_ ft.

- **Faunal indicators (check all that apply):**

Fish (list species if known): \_\_\_\_\_       Bull or green frog tadpoles

**Inlet/Outlet Permanency**

Type of inlet or outlet:

No inlet or outlet       Permanently flowing inlet or outlet  
 Ephemeral inlet or outlet       Other (explain): \_\_\_\_\_

- **Predominant substrate:**

Mineral soil (bare, leaf-litter bottom, upland mosses)       Organic matter (muck, mud): shallow or restricted to deepest area  
 Mineral soil (sphagnum moss present)       Organic matter (muck, mud): deep and wide spread

**Significant Vernal Pool Data Collection Form (Page 2 of 2)**

▪ **Non-woody pool vegetation (check all that apply):**

- |  |  |
|--|--|
| <input type="checkbox"/> Terrestrial nonvascular species,<br>(e.g., haircap moss <i>Lycopodium</i> spp.) | <input checked="" type="checkbox"/> Sphagnum moss                                  |
| <input type="checkbox"/> Dry site ferns<br>(e.g., spinulose wood ferns, lady fern, polypody fern)        | <input type="checkbox"/> Wet site ferns<br>(e.g. <i>Osmunda</i> spp.)              |
| <input type="checkbox"/> Moist site ferns<br>(e.g., sensitive fern, marsh fern, NY fern)                 | <input checked="" type="checkbox"/> Wet site graminoids<br>(e.g., grasses, sedges) |
| <input type="checkbox"/> Moist site vasculars<br>(e.g., skunk cabbage, jewelweed)                        | <input type="checkbox"/> Aquatic vasculars<br>(e.g., pickerelweed)                 |
| <input type="checkbox"/> Floating submerged aquatics<br>(e.g. water lilies, bladderwort)                 |  |

**Abundance Criteria:**

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No

Indicator Species	Egg Masses				Tadpoles/Larvae					
	#		Method of Verification*		Confidence Level**		Method of Verification*		Confidence Level**	
Wood frog	~	<10	S,H,P		2					
Spotted salamander	4	6	S,H,P	S,H	3	3				
Blue-spotted salamander	0									

\* Method of verification: S = Seen; H = Handled; P = Photographed  
 \*\* Confidence level: 1 = <60%; 2 = 60-95%, 3 = >95%

- **Fairy shrimp observed:**  Yes  No

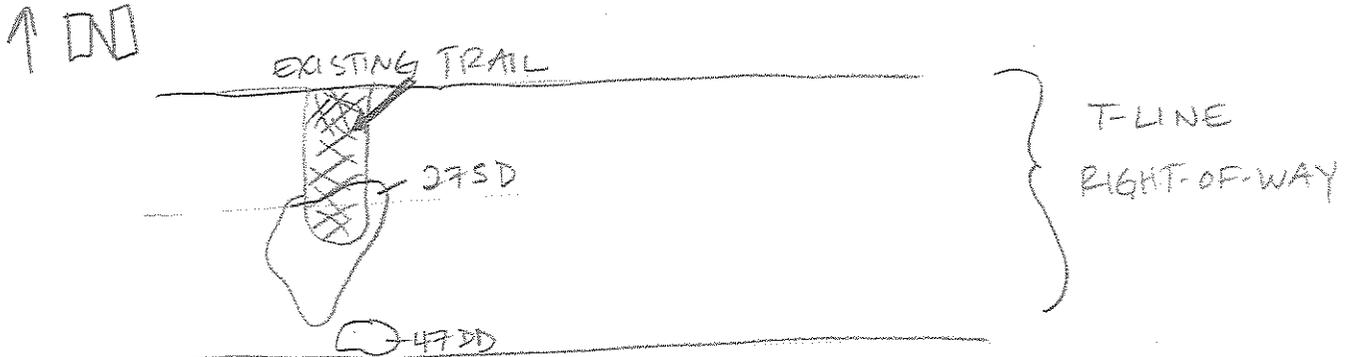
**Rarity Criteria:**

- Was a specific effort made to survey for rare species:  Yes  No  
 ▪ Note any rare species associated with pool. Check the method(s) of verification and fill in the confidence level (CL) for each species observation.

Species	Method of Verification*				CL	Species	Method of Verification*				CL
	V	P	H	S			V	P	H	S	
Blanding's turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Comet darter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

\* Method of verification: V = Vouchered; P = Photographed; H = Handled; S = Seen

**Field Sketch:**



# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 27ED

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Mattawamkeag, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAT155 approximately 500 feet east of Medway Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 27ED

#### Hydrology

- Approximate size of pool (at max. capacity): Width 15  m  ft (check one) Length 20  m  ft (check one)
- Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/20/2010, 5/12/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		5	7	S	S	3	3	M	M		
Blue-spotted Salamander		2	0	S	NA	3	NA	M	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 46ED

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Eric Doucette, Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: T3 R3, Maine

Brief site directions to the pool (using mapped landmarks): Adjacent to East Branch Mattawamkeag River in wetland T3R3-400

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\* : Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

Pool was likely created by river action (spring scourings and overflow)

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

**Pool ID: 46ED**

### Hydrology

- Approximate size of pool (at max. capacity): Width 15  m  ft (check one) Length 18  m  ft (check one)
- Maximum depth at time of survey: 3  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) lack of vegetation in deep sections
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other may be outlet to river in high water years, not observed this year

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/26/2010, 05/11/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/26/2010	05/11/2010	04/26/2010	05/11/2010	04/26/2010	05/11/2010	04/26/2010	05/11/2010				
Wood frog		0	0	NA	NA	NA	NA	NA	NA				
Spotted Salamander		28	44	S,H	S	3	3	M	A				
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: pool had significantly dried down as of 05/11/2010. 1.5 feet of water. 32 egg masses were now out of water. 12 egg masses still under water's surface.

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Eric Doucette Date 06/01/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 53DD

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Glenwood, Maine

Brief site directions to the pool (using mapped landmarks): In wetland GLE336 approximately 3,000 feet east of Dixie Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 53DD

### Hydrology

- Approximate size of pool (at max. capacity): Width 5  m  ft (check one) Length 5  m  ft (check one)
- Maximum depth at time of survey: 10  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/22/2010, 5/12/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/22/2010	05/12/2010	04/22/2010	05/12/2010	04/22/2010	05/12/2010	04/22/2010	05/12/2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		2	3	S	S	3	3	M	M		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 51DD

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Molunkus Twp, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MOL212 approximately 500 feet east of Aroostook Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 51DD

#### Hydrology

- Approximate size of pool (at max. capacity): Width 8  m  ft (check one) Length 8  m  ft (check one)
- Maximum depth at time of survey: 8  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/20/2010, 5/12/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010	04/20/2010	05/12/2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		3	2	S	S	3	3	M	M		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 50ED

**Observer Contact Information** Stantec Consulting Ltd. 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Eric Doucette Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b> <b>Natural</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b> <input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b> <b>Notes:</b>
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**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: T3 R3, Maine

Brief site directions to the pool (using mapped landmarks): In wetland T3R3-389 approximately 500 feet west of T3 R3 WELS/Forkstown TWP

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other:

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): old road bed/ATV trail exists on east side of pool and may have increased the depth and/or hydrologic regime.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 50ED

#### ii. Hydrology

• Approximate size of pool (at max. capacity): Width 16  m  ft (check one) Length 55  m  ft (check one)

• Maximum depth at time of survey: 3  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) abundant aquatic/wetland veg associated with large wetland complex

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other \_\_\_\_\_

#### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: Water Striders, Predacious Diving Beetles

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/27/2010, 05/11/2010

#### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/27/10	05/11/10	04/27/10	05/11/10	04/27/10	05/11/10	04/27/10	05/11/10		
Wood frog		29	0	S	S	3	3	M	H		
Spotted Salamander		1	4	S	S	3	3	F	A		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Eric Doucette Date 06/01/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 47ED

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Eric Doucette Phone or Email (207) 729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: T3 R3 WELS, Maine

Brief site directions to the pool (using mapped landmarks): In wetland T3R3-401 approximately 100 feet NE of East Branch Mattawamkeag River

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed. Wetland and pool were likely created by river action (overflow)

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 47ED

#### ii. Hydrology

- Approximate size of pool (at max. capacity): Width 25  m  ft (check one) Length 70  m  ft (check one)
- Maximum depth at time of survey: 10  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) relatively shallow, vegetated along edges but largely absent in center
- Ephemeral (drying out completely in most years)
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: Water striders

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/26/2010, 05/11/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/26/2010	05/11/2010	04/26/2010	05/11/2010	04/26/2010	05/11/2010	04/26/2010	05/11/2010				
Wood frog		0	0	NA	NA	NA	NA	NA	NA				
Spotted Salamander		4	3	S	S	3	3	M	A				
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Eric Doucette Date 06/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

**Significant Vernal Pool Data Collection Form**

Project: Oakfield Amendment

Survey Date (1<sup>st</sup>): 5/27/09

Town/County: Oakfield / Aroostook

Surveyor's Initials (1<sup>st</sup>): DMD

Associated Wetland ID (if applicable):

Survey Date (2<sup>nd</sup>): 6/09/09

Vernal Pool ID: 047DD

Surveyor's Initials (2<sup>nd</sup>): DMD

**VERNAL POOL SURVEY INFORMATION:** Is this pool?:  SVP or  VP

**Photos:\***

\*Number and Location

**Wetland Habitat Characterization:**

- Choose the best descriptor for the physical setting

Isolated Wetland Depression       Pool associated with larger wetland complex  
 Isolated Upland Depression       Floodplain Depression  
 Other: \_\_\_\_\_

- Check all wetland types that best apply to this pool:

Forested swamp       Wet meadow       Slow stream  
 Shrub swamp       Shallow pond       Floodplain overflow  
 Peatland (fen or bog)       Abandoned beaver flowage       Headwater seepage  
 Emergent marsh       Active beaver flowage       Other: \_\_\_\_\_

**Vernal Pool Status under the Natural Resources Protection Act (NRPA)**

**Natural Origin**

- Select the pool's origin:

Natural       Natural-Modified       Unnatural       Unknown

If modified, unnatural or unknown, describe any modern or historic impacts to the wetland:

**Hydrology**

- Select the pool's estimated hydroperiod AND provide rationale for opinion:

Permanent       Semi-permanent       Ephemeral       Unknown

Semi-permanent: drying partially in all years and completely in drought years

Ephemeral: drying out during the growing season in most years

Adjacent areas of muck previously holding water, now dry.

- Maximum depth at survey:

Visit 1:  0-12"       12-36"       36-60"       >60"  
Visit 2:  0-12"       12-36"       36-60"       >60"

- Approximate size of pool (at spring highwater):

Width: 15 \_\_\_\_\_ ft.      Length: 30 \_\_\_\_\_ ft.

- Faunal indicators (check all that apply):

Fish (list species if known): \_\_\_\_\_       Bull or green frog tadpoles

**Inlet/Outlet Permanency**

Type of inlet or outlet:

No inlet or outlet       Permanently flowing inlet or outlet  
 Ephemeral inlet or outlet       Other (explain): \_\_\_\_\_

- Predominant substrate:

Mineral soil (bare, leaf-litter bottom, upland mosses)       Organic matter (muck, mud): shallow or restricted to deepest area  
 Mineral soil (sphagnum moss present)       Organic matter (muck, mud): deep and wide spread

**Significant Vernal Pool Data Collection Form (Page 2 of 2)**

▪ **Non-woody pool vegetation (check all that apply):**

- |  |  |
|--|--|
| <input type="checkbox"/> Terrestrial nonvascular species,<br>(e.g., haircap moss <i>Lycopodium</i> spp.) | <input checked="" type="checkbox"/> Sphagnum moss                                |
| <input type="checkbox"/> Dry site ferns<br>(e.g., spinulose wood ferns, lady fern, polypody fern)        | <input checked="" type="checkbox"/> Wet site ferns<br>(e.g. <i>Osmunda</i> spp.) |
| <input type="checkbox"/> Moist site ferns<br>(e.g., sensitive fern, marsh fern, NY fern)                 | <input type="checkbox"/> Wet site graminoids<br>(e.g., grasses, sedges)          |
| <input checked="" type="checkbox"/> Moist site vasculares<br>(e.g., skunk cabbage, jewelweed)            | <input type="checkbox"/> Aquatic vasculares<br>(e.g., pickerelweed)              |
| <input type="checkbox"/> Floating submerged aquatics<br>(e.g. water lilies, bladderwort)                 |  |

**Abundance Criteria:**

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No

Indicator Species	Egg Masses				Tadpoles/Larvae					
	#		Method of Verification*		Confidence Level**		Method of Verification*		Confidence Level**	
Wood frog										
Spotted salamander	7	5	S,P	S,H	3	3				
Blue-spotted salamander										

\* Method of verification: S = Seen; H = Handled; P = Photographed

\*\* Confidence level: 1 = <60%; 2 = 60-95%, 3 = >95%

- **Fairy shrimp observed:**  Yes  No

**Rarity Criteria:**

- Was a specific effort made to survey for rare species:  Yes  No
- Note any rare species associated with pool. Check the method(s) of verification and fill in the confidence level (CL) for each species observation.

Species	Method of Verification*				CL	Species	Method of Verification*				CL
	V	P	H	S			V	P	H	S	
Blanding's turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Comet darter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

\* Method of verification: V = Vouchered; P = Photographed; H = Handled; S = Seen

**Field Sketch:**



# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 54DD

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Glenwood, Maine

Brief site directions to the pool (using mapped landmarks): In wetland 336 approximately 3,000 feet east of Dixie Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 54DD

### Hydrology

- Approximate size of pool (at max. capacity): Width 5  m  ft (check one) Length 5  m  ft (check one)
- Maximum depth at time of survey: 10  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/22/2010, 05/12/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/22/ 2010	05/12/ /2010	04/2 2/20 10	05/12/ 2010	04/22/ 2010	05/12/ 2010	04/22/ 2010	05/12/ 2010				
Wood frog		10	0	S	S	3	3	M	H				
Spotted Salamander		4	5	S	S	3	3	M	M				
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: \_\_Danielle Dyer\_\_ Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 61AA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : , Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC264 approximately 2,000 feet SE of Reed Dam Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

**i. Choose the best descriptor for the physical setting:**

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

**ii. Check all palustrine types that best apply to this pool or wetland:**

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

**iii. Predominate substrate in order of increasing hydroperiod:**

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

**iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):**

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

**i. Pool's Origin:**  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 61AA

### Hydrology

• Approximate size of pool (at max. capacity): Width 8  m  ft (check one) Length 16  m  ft (check one)

• Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/12/2010

### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010				
Wood frog		1	0	S	NA	3	NA	A	NA				
Spotted Salamander		12	10	S	S	3	3	M	A				
Blue-spotted Salamander		NA	NA	NA	NA	NA	NA	NA	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted:

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: Pool was completely covered with Algae on 05/12/2010, making egg mass location difficult

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 60AA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : , Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC264 approximately 2,000 feet SE of Reed Dam Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

**i.** Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

**ii.** Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

**iii.** Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

**iv.** Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

**i. Pool's Origin:**  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 60AA

#### Hydrology

- Approximate size of pool (at max. capacity): Width 3  m  ft (check one) Length 10  m  ft (check one)
- Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: Spring peepers chorusing

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/12/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010		
Wood frog		7	0	S	NA	3	NA	A	NA		
Spotted Salamander		15	15	S	S	3	3	M	A		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted:
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 59AA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : , Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Linclon St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC265 approximately 600 feet SW of Reed Dam Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  Natural  Natural-Modified  Non-Natural  Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): Some ruts within wetland near pool

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

**Pool ID: 59AA**

#### Hydrology

- Approximate size of pool (at max. capacity): Width 10  m  ft (check one) Length 30  m  ft (check one)
- Maximum depth at time of survey: 10  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/12/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/21/ 2010	05/12/ /2010	04/2 1/20 10	05/12/ 2010	04/21/ 2010	05/12/ 2010	04/21/ 2010	05/12/ 2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		20	18	S	S	3	3	M	A		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: Pool was completely covered with Algae on 05/12/2010, making egg mass location difficult

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 58AA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : , Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suit 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC265 approximately 600 feet SW of Reed Dam Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 58AA

### Hydrology

- Approximate size of pool (at max. capacity): Width 10  m  ft (check one) Length 12  m  ft (check one)
- Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/12/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		8	6	S	S	3	3	M	A		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/ #: Oakfield Amendment Organization Name: Stantec Consulting Ltd. Pool ID: 57AA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Audie Arbo Phone or Email  (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

## Landowner Contact Information

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

## 1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant (include notes in section 3d on Page 2)	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

## 2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: North Yarmouth Academy Grant Twp, Maine

Brief site directions to the pool (using mapped landmarks): In wetland NYA266 approximately 1,500 feet NE of Reed Dam Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

## 3. VERNAL POOL SURVEY INFORMATION

### a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression

Pool associated with larger wetland complex

Floodplain Depression

Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland

Wet meadow

Slow stream

Shrub wetland

Shallow pond

Floodplain overflow / Oxbow

Peatland (acidic fen or bog)

Abandoned beaver flowage

Headwater seepage

Emergent marsh

Active beaver flowage

Other:

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)

Sphagnum moss (anchored or suspended)

Wet site ferns (e.g. royal fern, marsh fern)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)

Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)

Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

### b. Vernal Pool Origin or Impacts

i. Pool's Origin:  Natural  Natural-Modified  Non-Natural  Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 57AA

### Hydrology

• Approximate size of pool (at max. capacity): Width 15  m  ft (check one) Length 15  m  ft (check one)

• Maximum depth at time of survey: 3  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years)         

Recommend dry out period observation

### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 5/12/2010

### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		2	1	S	S	3	3	M	M		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 56DD

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Danielle Dyer Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Glenwood, Maine

Brief site directions to the pool (using mapped landmarks): In wetland 357 approximately 6,000 feet south of Babcock Brook

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 56DD

### Hydrology

• Approximate size of pool (at max. capacity): Width 30  m  ft (check one) Length 15  m  ft (check one)

• Maximum depth at time of survey: 12  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/22/2010, 5/12/2010

### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/22/2010	05/12/2010	04/22/2010	05/12/2010	04/22/2010	05/12/2010	04/22/2010	05/12/2010		
Wood frog		2	1	S	S	3	3	M	M		
Spotted Salamander		0	2	NA	S	NA	3	NA	M		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\*Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments: The maximum water depth of the vernal pool during second visits was reduced to 6 inches, the pool dimensions at that time were 15 x 12 feet.

Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol

Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401

Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)

Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Danielle Dyer Date 6/30/2010

For MDIF&W Use Only: Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 62AA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : , Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC264 approximately 2,000 feet SE of Reed Dam Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Forested wetland             | <input type="checkbox"/> Wet meadow               | <input type="checkbox"/> Slow stream                 |
| <input checked="" type="checkbox"/> Shrub wetland     | <input type="checkbox"/> Shallow pond             | <input type="checkbox"/> Floodplain overflow / Oxbow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage           |
| <input type="checkbox"/> Emergent marsh               | <input type="checkbox"/> Active beaver flowage    | <input type="checkbox"/> Other:                      |

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)                        | <input checked="" type="checkbox"/> Sphagnum moss (anchored or suspended)                                       |
| <input type="checkbox"/> Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)                      | <input checked="" type="checkbox"/> Wet site ferns (e.g. royal fern, marsh fern)                                |
| <input checked="" type="checkbox"/> Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)            | <input checked="" type="checkbox"/> Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)         |
| <input checked="" type="checkbox"/> Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) | <input type="checkbox"/> Aquatic vascular spp. (e.g. pickerelweed, arrowhead)                                   |
|   | <input type="checkbox"/> Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort) |

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 62AA

#### Hydrology

- Approximate size of pool (at max. capacity): Width 40  m  ft (check one) Length 100  m  ft (check one)
- Maximum depth at time of survey: 1.5  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/12/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010				
Wood frog		1	0	S	NA	3	NA	A	NA				
Spotted Salamander		53	46	S	S	3	3	M	A				
Blue-spotted Salamander		16	0	S	NA	3	NA	M	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 107CF

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Charles Ferris Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: T3 R3 WELS, Maine

Brief site directions to the pool (using mapped landmarks): \_\_\_\_\_ within 1000ft of existing carriage path \_\_\_\_\_

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.



# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/#: Oakfield Amendment Organization Name: Stantec Consulting Ltd. Pool ID: **100CFM**

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Charles Ferris Phone or Email (207) 729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

## Landowner Contact Information

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

## 1. OBSERVER RECOMMENDATION

This pool is:	<input checked="" type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant (include notes in section 3d on Page 2)	<input type="checkbox"/> Not significant due to:	<input type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes: _____

## 2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Macwahoc, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC233 approximately 1,000 feet east of Little Molunkus Stream

### Location of Vernal Pool\* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

## 3. VERNAL POOL SURVEY INFORMATION

### a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: pool encompasses entire wetland

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

### b. Vernal Pool Origin or Impacts

i. Pool's Origin:  Natural  Natural-Modified  Non-Natural  Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): adjacent to existing electrical transmission line



# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 65AA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Glenwood, Maine

Brief site directions to the pool (using mapped landmarks): In wetland GLE363 adjacent to south side of Sweden Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland  Wet meadow  Slow stream  
 Shrub wetland  Shallow pond  Floodplain overflow / Oxbow  
 Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)  
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)  
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  Natural  Natural-Modified  Non-Natural  Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): Some ruts present in wetland near vernal pool

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

**Pool ID: 65AA**

### Hydrology

• Approximate size of pool (at max. capacity): Width 50  m  ft (check one) Length 80  m  ft (check one)

• Maximum depth at time of survey: 2.5  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

Permanent

Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system

Ephemeral (drying out completely in most years) \_

Recommend dry out period observation

### iii. Inlet/Outlet Permanency

No inlet / outlet

Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Ephemeral inlet / outlet

Other

### iv. Faunal Indicators:

Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/22/2010, 5/12/2010

### ii. Abundance Criteria

■ Was the entire pool comprehensively surveyed for egg masses?  Yes  No

■ For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/22/2010	05/12/2010	04/22/2010	05/12/2010	04/22/2010	05/12/2010	04/22/2010	05/12/2010		05/12/2010		05/12/2010
Wood frog		38	0	S	S	3	3	M	H		F		3
Spotted Salamander		67	81	S	S	3	3	M	M		NA		NA
Blue-spotted Salamander		38	13	S	S	3	3	M	M		NA		NA
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

■ Was a specific effort made to survey for rare species?  Yes  No

■ If yes, indicate which species were targeted: \_\_\_\_\_

■ Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments: Pool was completely covered with Algae on 05/12/2010, making egg mass location difficult.

During second visits, wood frog tadpoles were observed and egg masses were no longer present, so therefore not counted.

Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol

Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401

Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)

Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 64AA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> <b>Not significant due to:</b>	<input checked="" type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC238 approximately 125 feet west of Route 2 (Silver Ridge Road)

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

**i. Choose the best descriptor for the physical setting:**

Isolated Upland Depression  Pool associated with larger wetland complex

Floodplain Depression  Other: \_\_\_\_\_

**ii. Check all palustrine types that best apply to this pool or wetland:**

Forested wetland  Wet meadow  Slow stream

Shrub wetland  Shallow pond  Floodplain overflow / Oxbow

Peatland (acidic fen or bog)  Abandoned beaver flowage  Headwater seepage

Emergent marsh  Active beaver flowage  Other:

**iii. Predominate substrate in order of increasing hydroperiod:**

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

**iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):**

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)  Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

**b. Vernal Pool Origin or Impacts**

**i. Pool's Origin:**  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

## Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

### 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 64AA

#### Hydrology

- Approximate size of pool (at max. capacity): Width 3  m  ft (check one) Length 6  m  ft (check one)
- Maximum depth at time of survey: 2  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

#### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

#### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

#### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/22/2010, 5/12/2010

#### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae	
	Information:	#		VM*		CL**		EMI***		VM*	CL**
	Date:	04/22/2010	05/12/2010	04/22/2010	05/12/2010	04/22/2010	05/12/2010	04/22/2010	05/12/2010		
Wood frog		0	0	NA	NA	NA	NA	NA	NA		
Spotted Salamander		9	9	S	S	3	3	M	A		
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA		
Fairy Shrimp											

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

#### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

#### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

#### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

#### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria

# Maine Association of Wetland Scientists (MAWS)

## Vernal Pool Data Collection Form

**Project Name/#:** Oakfield Amendment **Organization Name:** Stantec Consulting Ltd. **Pool ID:** 62AA

**Observer Contact Information** Stantec Consulting Ltd., 30 Park Drive, Topsham, ME, 04086, (207) 729-1199

Primary Observer (include secondary, if applicable) : , Audie Arbo Phone or Email (207)729-1199

Primary Observer has Submitted the MAWS VP Credential Form:  Previously Submitted  Included w/this Submission

**Landowner Contact Information**

Landowner permission obtained for this survey & submission:  Yes  No Notes: \_\_\_\_\_

Landowner contact information (REQUIRED): Name: Maine GenLead LLC Phone: \_\_\_\_\_

Street Address: 179 Lincoln St. Suite 500 City: Boston State: MA Zip: 02111

**1. OBSERVER RECOMMENDATION**

<b>This pool is:</b>	<input checked="" type="checkbox"/> <b>Significant</b>	<input type="checkbox"/> <b>Potentially Significant</b> <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> <b>Not significant due to:</b>	<input type="checkbox"/> <b>does not meet MDEP SVP biological criteria</b>
				<input type="checkbox"/> <b>does not meet MDEP vernal pool definition criteria</b>
				<b>Notes:</b>

**2. VERNAL POOL LOCATION INFORMATION**

Municipality or Township: Macwahoc Plt, Maine

Brief site directions to the pool (using mapped landmarks): In wetland MAC264 approximately 2,000 feet SE of Reed Dam Road

**Location of Vernal Pool\*** (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit\*\*: Trimble Pro-XT Mapping grade GPS with post processed corrections:  Yes  No

Check / submit one:  GPS-location of center point of the pool included in shapefile named\* \_\_\_\_\_

GPS-location of pool perimeter included as polygon shapefile named\* \_\_\_\_\_

Pool Center Point Easting\*\*\*: \_\_\_\_\_ Pool Center Point Northing\*\*\*: \_\_\_\_\_

\* Observers must check the information on an aerial photo to ensure data quality.

\*\* If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

\*\*\* Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

**3. VERNAL POOL SURVEY INFORMATION**

**a. Pool or Wetland Habitat Characterization**

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression  Pool associated with larger wetland complex  
 Floodplain Depression  Other: \_\_\_\_\_

ii. Check all palustrine types that best apply to this pool or wetland:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Forested wetland             | <input type="checkbox"/> Wet meadow               | <input type="checkbox"/> Slow stream                 |
| <input checked="" type="checkbox"/> Shrub wetland     | <input type="checkbox"/> Shallow pond             | <input type="checkbox"/> Floodplain overflow / Oxbow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage           |
| <input type="checkbox"/> Emergent marsh               | <input type="checkbox"/> Active beaver flowage    | <input type="checkbox"/> Other:                      |

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  
 Mineral soil (sphagnum moss present)  
 Organic matter (peat/muck) shallow or restricted to deepest portion  
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)                        | <input checked="" type="checkbox"/> Sphagnum moss (anchored or suspended)                                       |
| <input type="checkbox"/> Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern)                      | <input checked="" type="checkbox"/> Wet site ferns (e.g. royal fern, marsh fern)                                |
| <input checked="" type="checkbox"/> Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York)            | <input checked="" type="checkbox"/> Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)         |
| <input checked="" type="checkbox"/> Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) | <input type="checkbox"/> Aquatic vascular spp. (e.g. pickerelweed, arrowhead)                                   |
|   | <input type="checkbox"/> Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort) |

**b. Vernal Pool Origin or Impacts**

i. Pool's Origin:  **Natural**  **Natural-Modified**  **Non-Natural**  **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED): No anthropogenic disturbances observed.

# Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

## 3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 62AA

### Hydrology

- Approximate size of pool (at max. capacity): Width 40  m  ft (check one) Length 100  m  ft (check one)
- Maximum depth at time of survey: 1.5  in  ft  cm  m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years) shallow, abundant peat moss even at bottom of pool, but part of a larger wetland system
- Ephemeral (drying out completely in most years) \_
- Recommend dry out period observation

### iii. Inlet/Outlet Permanency

- No inlet / outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet  Other

### iv. Faunal Indicators:

- Fish (species): \_\_\_\_\_  Bullfrog or Green frog tadpoles  Other: \_\_\_\_\_

### c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 04/21/2010, 05/12/2010

### ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses?  Yes  No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010	04/21/2010	05/12/2010				
Wood frog		1	0	S	NA	3	NA	A	NA				
Spotted Salamander		53	46	S	S	3	3	M	A				
Blue-spotted Salamander		16	0	S	NA	3	NA	M	NA				
Fairy Shrimp													

\*Verification Method: S= Seen, H= Handled, P= Photographed

\*\*Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

\*\*\* Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

### iii. Rarity Criteria

- Was a specific effort made to survey for rare species?  Yes  No
- If yes, indicate which species were targeted: \_\_\_\_\_
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

\*Verification Method: P= Photographed, H= Handled, S= Seen

\*\*CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

### d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or  emailed to: [vernalpools.mdifw@maine.gov](mailto:vernalpools.mdifw@maine.gov)

### OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Audie Arbo Date 6/30/2010

### For MDIF&W Use Only:

Reviewed by MDIF&W Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:

- Significant  Potentially significant but lacking critical data  Not significant due to:  does not meet biological criteria and/or  does not meet definition criteria



# Maine State Vernal Pool Assessment Form



**INSTRUCTIONS:** Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: SVP19BE\_N MDIFW Pool ID: \_\_\_\_\_

## 1. PRIMARY OBSERVER INFORMATION

- a. Observer name: Bryan Emerson
- b. Contact and credentials previously provided?  No (submit Addendum 1)  Yes

## 2. PROJECT CONTACT INFORMATION

- a. Contact name:  same as observer  other \_\_\_\_\_
- b. Contact and credentials previously provided?  No (submit Addendum 1)  Yes
- c. Project Name: Maine GenLead

**NOTE:** Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

## 3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner?  Yes  No If no, was landowner permission obtained for survey?  Yes  No
- b. Landowner's contact information (required)
  - Name: Maine GenLead LLC Phone: \_\_\_\_\_
  - Street Address: 179 Lincoln St, Suite 500 City: Boston State: MA Zip: 02111
- c.  Large Projects: check if separate project landowner data file submitted

## 4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Molunkus Twp

Brief site directions to the pool (using mapped landmarks):

Within wetland 03beb on south side of proposed access road AR260-261, just east of the junction with Aroostook Road.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

### GPS location of vernal pool

Longitude/Easting: \_\_\_\_\_ Latitude/Northing: \_\_\_\_\_

Check Datum:  NAD27  NAD83 / WGS84 Coordinate system: \_\_\_\_\_

- Check one:  GIS shapefile  
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)  
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately \_\_\_\_\_ m  /ft  in the compass direction of \_\_\_\_\_ degrees from the above GPS point. (acceptable)

# Maine State Vernal Pool Assessment Form

## 5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): \_\_\_\_\_

### b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression  Pool associated with larger wetland complex  
 Floodplain depression  Other: \_\_\_\_\_

■ Check all wetland types that best apply to this pool:

- Forested swamp  Wet meadow  Slow stream  
 Shrub swamp  Lake/Pond  Floodplain overflow / oxbow  
 Peatland (fen or bog)  Abandoned beaver flowage  Headwater seepage  
 Emergent marsh  Active beaver flowage  Other: \_\_\_\_\_

### c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin:  Natural  Natural-Modified  Unnatural  Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Pool impounded slightly. Natural wetland extends from road with egg masses in natural and modified portions

### ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent  Semi-permanent (drying partially in all years and completely in drought years)  Ephemeral (drying out completely in most years)  Unknown

Explain:

Pool was dry during August 2010 site visit, and the pool bottom is well vegetated.

■ Maximum depth at survey:  0-12" (0-1 ft.)  12-36" (1-3 ft.)  36-60" (3-5 ft.)  >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50  m  ft Length: 100  m  ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)  Organic matter (peat/muck) shallow or restricted to deepest portion  
 Mineral soil (sphagnum moss present)  Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)  Wet site ferns (e.g. royal fern, marsh fern)  
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)  Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)  
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)  Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)  
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)  Aquatic vascular spp. (e.g. pickerelweed, arrowhead)  
 Sphagnum moss (anchored or suspended)  Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)  
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish  Bullfrog or Green Frog tadpoles  Other: \_\_\_\_\_

### iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet  Permanent inlet or outlet (channel with well-defined banks and permanent flow)  
 Intermittent inlet or outlet  Other or Unknown (explain): \_\_\_\_\_

# Maine State Vernal Pool Assessment Form

## 6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/18/11 \_\_\_\_\_

### b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses?  Yes  No; what % of pool surveyed? \_\_\_\_\_

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae					
	#		Confidence Level <sup>1</sup>		Egg Mass Maturity <sup>2</sup>		Observed		Confidence Level <sup>1</sup>			
Wood Frog	~13		3		H		yes		3			
Spotted Salamander	27		3		A/H		0		3			
Blue-spotted Salamander	0		3		n/a		0		3			
Fairy Shrimp <sup>3</sup>	0		3									

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

3-Fairy Shrimp: X = present

### c. Rarity criteria

■ Note any rare species associated with vernal pools. Check the method(s) of verification and fill in the confidence level (CL) for each species observation. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

\*Method of verification: P = Photographed, H = Handled, S = Seen

\*\*CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

### d. Optional observer recommendation:

SVP  Potential SVP  Non Significant VP  Indicator Breeding Area

### e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife  
Attn: Vernal Pools  
650 State Street, Bangor, ME 04401

**NOTE:** Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

**For MDIFW use only** Reviewed by MDIFW Date: \_\_\_\_\_ Initials: \_\_\_\_\_

This pool is:  Significant  Potentially Significant but lacking critical data  Not Significant due to:  does not meet biological criteria.  does not meet MDEP vernal pool criteria.

Comments:



**Photo 1.** SVP19BE\_N from the west. Note road at left of photo.  
Stantec, May 18, 2011.



**Photo 2.** SVP19BE\_N from the east. Note road at right of photo.  
Stantec, May 18, 2011.

## **Appendix E**

### **Representative Site Photographs**



**Photo 1.** Significant Vernal Pool SVP09TT\_N, located in Wetland MAC234 Stantec, April 2010.



**Photo 2.** Natural Vernal Pool (non-significant) VP58AA\_N, located in Wetland MAC265. Stantec, April 2010.



**Photo 3.** Vernal pool VP17CF\_M, a typical man-made vernal pool in excavation.  
Stantec, April 2010.



**Photo 4.** Vernal pool VP27MA\_M, a typical man-made vernal pool in an old road.  
Stantec, April 2010.



**Photo 5.** Typical inland wading bird and waterfowl habitat Wetland CHE022.  
Stantec, November 2009.



**Photo 6.** Stream STR45 typical intermittent stream.  
Stantec, August 2009.



**Photo 7.** Wetland CHE036, typical emergent wetland.  
Stantec, October 2009.



**Photo 8.** Wetland GLE365, typical forested wetland.  
Stantec, November 2009



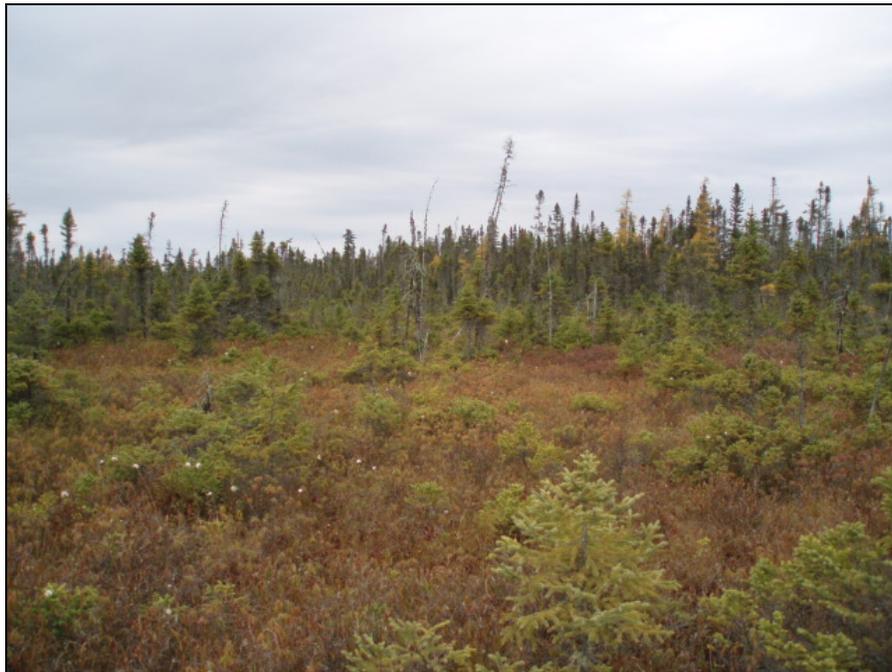
**Photo 9.** Stream STR22, typical unnamed perennial stream.  
Stantec, October 2009.



**Photo 10.** Wetland WOO107, typical scrub-shrub wetland.  
Stantec, April 2010.



**Photo 11.** Wetland GLE359, Alder Stream exemplary ecosystem.  
Stantec, October 23, 2009.



**Photo 12.** Wetland GLE337, typical scrub-shrub and forested wetland.  
Stantec, October, 2009.



**Photo 13.** Small yellow water crowfoot (*Ranunculus gmelinii*) in Wetland GLE354.  
Stantec, June 2010.



**Photo 14.** Swamp-fly honeysuckle (*Lonicera oblongifolia*) in Wetland GLE343.  
Stantec, June 2010.



**Photo 15.** Showy Lady's Slipper (*Cypripedium reginae*) in Wetland GLE359. Stantec, June 2010.

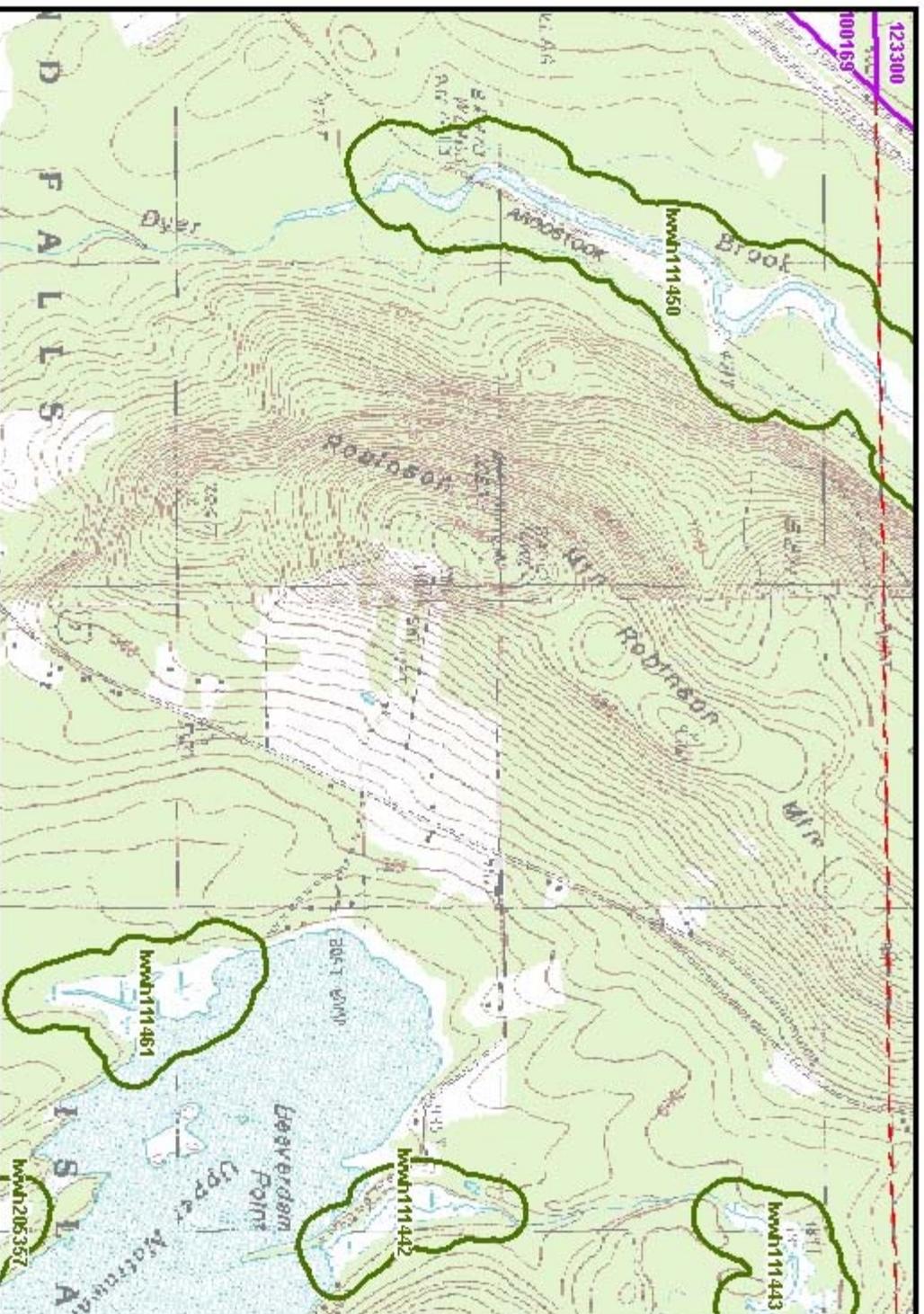


**Photo 16.** Marsh valerian (*Valerian uliginosa*), in Wetland GLE359. Stantec, June 2010.

## **Appendix F**

### **Agency Correspondence**

# Stantec-IF



- Bald Eagle Nest Site
- Piping Plover / Least Tern Nesting, Feeding, & Brood-rearing Area
- Roseate Tern Nesting Area
- Deer Winter Area
- Inland Waterfowl / Wading Bird Habitat
- Tidal Waterfowl / Wading Bird Habitat
- Seabird Nesting Island
- Shorebird Area
- Significant Vernal Pool
- Endangered, Threatened, & Special Concern Species Habitat
- Township Boundary
- County



1 = 20,937

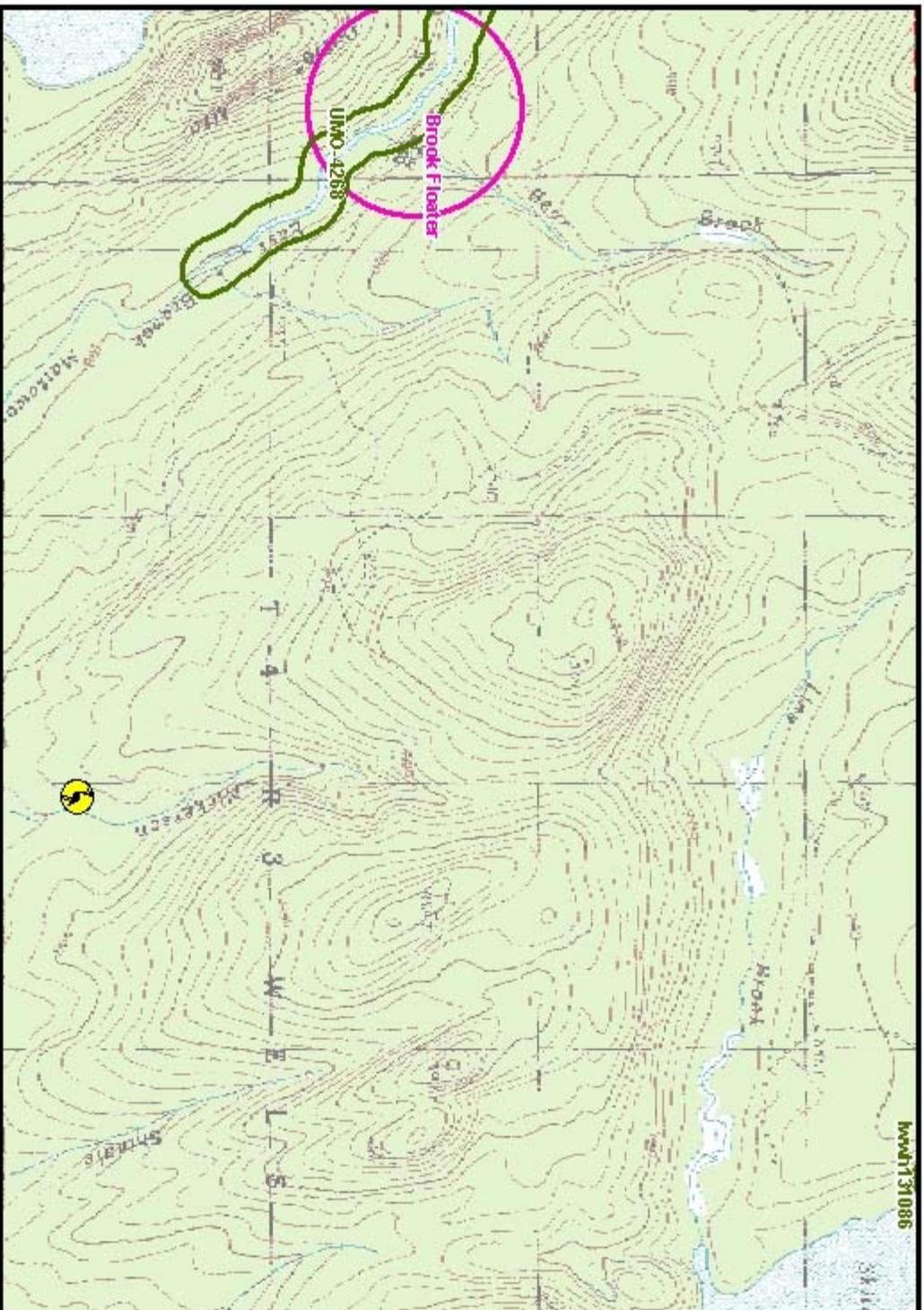
UTM Projection, Zone 19N, NAD83



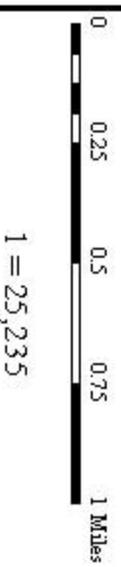
73 Cobb Road  
 Enfield, ME 04493  
 Voice: (207) 732-4132  
 Fax: (207) 732-4405  
 March 11, 2010



# Stantec-T4 R3 WELLS



- Bald Eagle Nest Site
- Piping Plover / Least Tern Nesting, Feeding, & Brood-rearing Area
- Roseate Tern Nesting Area
- Deer Winter Area
- Inland Waterfowl / Wading Bird Habitat
- Tidal Waterfowl / Wading Bird Habitat
- Seabird Nesting Island
- Shorebird Area
- Significant Vernal Pool
- Endangered, Threatened, & Special Concern Species Habitat
- Township Boundary
- County



1 = 25,235

UTM Projection, Zone 19N, NAD83



73 Cobb Road  
 Enfield, ME 04493  
 Voice: (207) 732-4132  
 Fax: (207) 732-4405  
 March 11, 2010





JOHN E. BALDACCI  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF  
INLAND FISHERIES & WILDLIFE  
284 STATE STREET  
41 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0041

ROLAND MARTIN  
COMMISSIONER

March 29, 2010

PO Box 447  
Ashland, ME 04732

Brooke E. Barnes  
Stantec Consulting  
30 Park Drive  
Topsham, ME 04086

RE: Significant resources associated with Oakfield, Island Falls, and Dyer Brook and other areas, ME

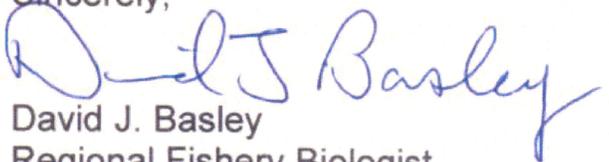
Dear Mr. Barnes:

Please be advised that there are no known threatened, endangered or special status inland fish species or habitat within the proposed project area. Meduxnekeag Lake is managed for brown trout and splake through an annual stocking program. Wild populations of chain pickerel and white perch are present in the lake providing warmwater sport fisheries. Rainbow smelt are present and are significant forage species for these gamefish. Smelts utilize tributaries to the lake for spawning runs. The East Branch Mattawamkeag River supports a limited wild brook trout population that is supplemented with hatchery trout in the Oakfield and Smyrna area.

We would encourage great detail to road construction in accessing these areas for turbine installation and transmission lines to protect the surface water quality of surrounding lakes, rivers and brooks.

Thank you for the opportunity to review and comment on the fisheries resources in this proposed project area.

Sincerely,

  
David J. Basley  
Regional Fishery Biologist



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Maine Field Office – Ecological Services  
17 Godfrey Drive, Suite #2  
Orono, ME 04473  
(207) 866-3344 Fax: (207) 866-3351

FWS/Region 5/ES/MEFO

March 15, 2010

Brooke E. Barnes  
Stantec Consulting  
30 Park Drive  
Topsham, ME 04086

Dear Ms. Barnes:

Thank you for your letter dated March 1, 2010 requesting resource information from the U.S. Fish and Wildlife Service (Service) for proposed wind power facility sites in Oakfield, Island Falls and Dyer Brook, Maine, as well as appurtenant transmission line corridors. We recommend that you consult the Service's interim guidance on wind energy development at <http://www.fws.gov/habitatconservation/wind.pdf>. We used the Service's interim guidance as a model for developing *Guidelines for Building and Operating Wind Energy Facilities in Maine Compatible with Federal Fish and Wildlife Regulations*, which are attached to this letter. We stepped down the national interim guidance to make the guidance more relevant for Maine wind energy developers. We provide these guidelines so you can make an informed decision regarding site selection, project design, and address the requirements of federal fish and wildlife legislation.

This letter provides the Service's response pursuant to Section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

**Project Name/Location:** Oakfield, Island Falls & Dryer Brook wind facilities and transmission lines

**Log Number:** 53411-2010-SL-0133

### **Federally Listed Species**

#### **Atlantic salmon**

This project occurs within the range of the Gulf of Maine Distinct Population Segment (GOM DPS) of Atlantic salmon (*Salmo salar*) in Maine, a federally-endangered species under the joint



jurisdiction of the Service and the National Marine Fisheries Service (NMFS) (74 FR 29344; June 19, 2009). The Atlantic salmon GOM DPS encompasses all naturally spawned and conservation hatchery populations of anadromous Atlantic salmon whose freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River and wherever these fish occur in the estuarine and marine environment. Also included in the GOM DPS are all associated conservation hatchery populations used to supplement these natural populations. Excluded are landlocked Atlantic salmon and those salmon raised in commercial hatcheries for aquaculture.

The proposed project site also occurs within a HUC-10 watershed (Mattawamkeag River 1&2, East Branch & West Branch Mattawamkeag, Penobscott River 2 at Mattawamkeag, and Penobscott River 1 at West Enfield) that has been designated as critical habitat for Atlantic salmon by NMFS (74 FR 29300; June 19, 2009). Critical habitat is designated to include all perennial rivers, streams, and estuaries and lakes connected to the marine environment within the designated watershed.

Please note that under Section 7 of the ESA, it is the federal action agency's responsibility to determine if a project may affect a federally listed species. For example, if the project receives federal funding or needs a federal permit, those actions may provide a "nexus" for Section 7 consultation under the ESA<sup>1</sup>. If the federal action agency determines that a project would have "no effect" on a listed species or critical habitat, they do not need to seek the concurrence of the Service and there is no need for Section 7 consultation. If the federal agency determines that a project "may affect" a listed species or its critical habitat, then consultation pursuant to Section 7 of the ESA should be initiated. Please note, however, that there is no provision under Section 7 for consultation after a project has already been completed.

For Atlantic salmon and its critical habitat, NMFS and the Service share consultation responsibilities under Section 7 of the ESA. The Service generally handles projects in the freshwater component of the salmon's habitat and NMFS handles projects in the marine and estuarine environment (generally below the head of tide).

Based on the information currently available to us, no other federally-listed species under the jurisdiction of the Service are known to occur in the project area.

### **Canada lynx**

The federally-threatened Canada lynx (*Lynx canadensis*) occurs throughout northern Maine and could occur in your project area. The proposed sites are outside of the lynx critical habitat and just outside the area we normally review federal funded and permitted projects for lynx. We are not aware of lynx occurrences in or near the proposed sites. The proposed project site is not within the area designated as critical habitat for the Canada lynx (74 FR 8616; February 25, 2009), but lynx may occur on or near your project area. Federal agencies permitting or funding your project should consult with the Service according to Section 7 of the ESA.

---

<sup>1</sup> Section 7 consultation, however, is only necessary when a federal agency takes a *discretionary* action (e.g., an agency has a choice of whether or not to fund or permit a particular project).

Canada lynx in Maine prefer to use regenerating spruce-fir habitats having high stem densities. These regenerating stands support high populations of snowshoe hare (*Lepus americanus*), the primary food of the Canada lynx. Highest hare densities are generally present about 12 to 30 years after clearcutting or heavy partial harvesting. Forest practices that diminish habitat quality for snowshoe hares may have an adverse affect on Canada lynx. We have developed *Canada lynx habitat management guidelines for Maine*. Please email ([mark\\_mccollough@fws.gov](mailto:mark_mccollough@fws.gov)) or call (207 866-3344 x115) if you are interested in obtaining a copy.

Wind power construction activities may cause adverse effects to the Canada lynx depending on the size and scale of habitat alteration a project may cause. Evaluations of boreal (spruce-fir) habitat and/or snow tracking surveys in the vicinity of proposed towers, roads, transmission lines, and other associated facilities would help assess the potential for the occurrence of lynx. Maine Inland Fisheries and Wildlife (MDIFW) conducted lynx snow track surveys in northern and western Maine in recent years. You should contact Jennifer Vashon, MDIFW lynx biologist (650 State Street, Bangor, ME 04401) to determine if surveys were conducted in your project area or nearby townships. Ultimately, this information will be needed by federal agencies permitting or funding your project to determine if adverse effects to lynx or critical habitat are anticipated. We ask that you share this information with the Service and federal permitting or funding agencies (Army Corps of Engineers or others) who are required to consult with the Service according to Section 7 of the ESA. We encourage project designs that will avoid and minimize adverse effects to lynx and their habitat.

### **Other Protected Species**

Occasional, transient bald eagles may occur in the general project area. The bald eagle was removed from the federal threatened list on August 9, 2007 and is now protected from take under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. "Take" means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. The term "disturb" under the Bald and Golden Eagle Protection Act was recently defined within a final rule published in the Federal Register on June 5, 2007 (72 Fed. Reg. 31332). "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

Further information on bald eagle delisting and their protection can be found at <http://www.fws.gov/migratorybirds/baldeagle.htm>.

Please consult with our new national bald eagle guidelines, which can found at <http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>. These Guidelines are voluntary and were prepared to help landowners, land managers and others meet the intent of the Eagle Act and avoid disturbing bald eagles. If you believe this project will result in taking or disturbing bald or golden eagles, please contact our office for further guidance. We encourage early and frequent consultations to avoid take of eagles.

We have not reviewed this project for state-threatened and endangered wildlife, wildlife species of special concern, and significant wildlife habitats protected under the Maine Natural Resources Protection Act. We recommend that you contact the Maine Department of Inland Fisheries and Wildlife:

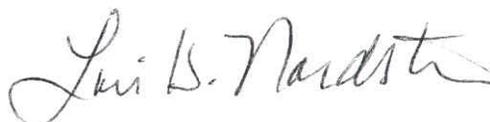
Steve Timpano  
Maine Department of Inland Fisheries and Wildlife  
284 State St.  
State House Station 41  
Augusta, ME 04333-0041  
Phone: 207 287-5258

We also recommend that you contact the Maine Natural Areas Program for additional information on state-threatened and endangered plant species, plant species of special concern, and rare natural communities:

Lisa St. Hilaire  
Maine Natural Areas Program  
Department of Conservation  
93 State House Station  
Augusta, ME 04333  
Phone: 207 287-8046

If you have any questions about this project, please contact Mark McCollough (Canada lynx and bald eagles) at (207) 866-3344 x115 or Wende Mahaney (wetlands and Atlantic salmon) at (207) 866-3344 x118.

Sincerely,



Lori H. Nordstrom  
Field Supervisor

Enclosure :

- NOVEMBER 2009 USFWS WEND ENERGY GUIDELINES
- FEBRUARY 11, 2010 CANADA LYNX GUIDELINES

## Appendix to Maine Field Office wind development guidelines

### Canada lynx February 11, 2010

The federally-threatened Canada lynx occurs throughout northern Maine and could occur in or near your project area. Federal agencies funding or permitting wind projects are required to consult with Service according to Section 7 of the Endangered Species Act. Project effects on lynx must be addressed if your project occurs within the area depicted in Map 1. Within critical habitat (Map 2) federal agencies must ensure projects will not result in adverse modification of habitat. We recommend the following:

#### Pre-application

1. **Avoid adverse effects to lynx and their habitat** - A landscape analysis should be conducted to identify areas suitable for wind development that will not fragment or adversely affect current and future habitat of Canada lynx. University of Maine lynx and snowshoe hare habitat models (e.g. Hoving 2002, Robinson 2006, Simons, 2009, Scott 2009) and Maine Inland Fisheries and Wildlife lynx occurrence data are suggested sources of information. Project developers are encouraged to consult with the Service when locating potential sites.
2. **Contact the Service and permitting agency early and often** - Once a site is selected for potential development (prior to placement of met towers) wind developers and their consultants should contact our office requesting information on federally-listed species in the area. It is important that projects be identified as potential wind energy projects so that we provide the best scientific information and guidance.
3. **Document lynx occurrence** - We recommend at least three preconstruction winter snow tracking surveys for Canada lynx be conducted in the township(s) where turbines, roads, transmission lines, and other associated facilities are proposed. Surveys should follow MDIFW lynx snow tracking protocol. If surveys are not conducted, Canada lynx will be assumed to be present at high densities. Study design of snow track surveys should be discussed with the Service.
4. **Document lynx habitat** - Current and future lynx habitat should be identified and mapped in the vicinity of the project footprint and surrounding landscape. Canada lynx in Maine prefer to use regenerating spruce-fir habitats having high stem densities. These regenerating stands support high populations of snowshoe hare, the primary food of the Canada lynx. Highest hare densities are generally present about 12 to 30 years after clearcutting or heavy partial harvesting. Sources of information necessary to map habitat include landowner stand maps (regenerating softwood and softwood dominated stands, mature softwood (future habitat)), aerial photo interpretation, and satellite imagery (Simons 2009, Scott 2009). Habitat mapping methods should be discussed with the Service.
5. **Evaluate risk to lynx and their habitat** - Characterize habitat present in the project area in relation to surrounding landscape. Review literature of lynx movements in relation to wind projects or similar development. Is project construction likely and operation likely to displace lynx from their habitat? At a minimum, wind developers should document

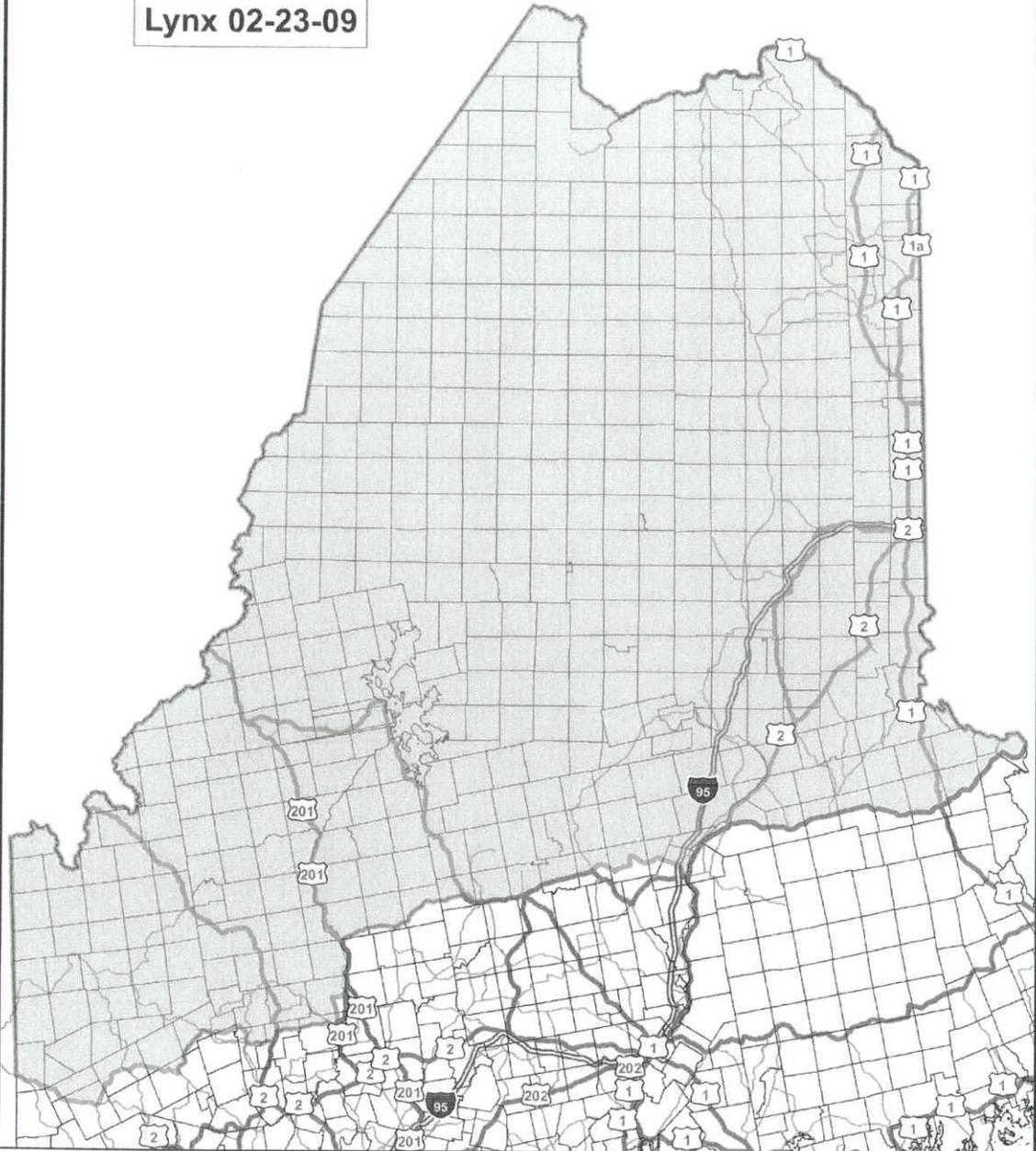
total project footprint, acres of lynx habitat within the project footprint, miles of new road, and miles of new road in lynx habitat. Fragmentation of large blocks of lynx habitat should be documented. Anticipated traffic volumes and speed (construction and post-construction) should be documented. Direct, indirect, and cumulative effects on lynx should be analyzed (including disturbance effects on lynx).

6. **Avoid and minimize effects to lynx.** The Service will consult with federal agencies funding, implementing, or permitting wind projects. Projects that are likely to adversely affect or take lynx will require formal consultation and a biological opinion, which may require up to 130 days after all materials have been submitted. Projects that avoid adverse effects will require informal consultation, which can be completed in a much shorter period of time. Through informal or formal consultation, the Service will make recommendations to federal permitting or funding agencies that may further avoid or minimize effects to Canada lynx and their habitat. These recommendations may become permit conditions. Avoidance measures may include gating new roads to avoid introducing new sources of lynx mortality, revegetating disturbed areas and maintain young forest habitat to create snowshoe hare habitat, and limiting speeds of vehicles to reduce likelihood of vehicle mortality. In some instances, mitigation may be warranted to compensate for adverse effects to Canada lynx and their habitat.
7. **Restore habitat** - A vegetation management plan for restoring and maintaining turbine pads, roadsides, and transmission line corridors should be prepared. A habitat restoration plan for the conclusion of the project should be prepared.

#### Post-construction

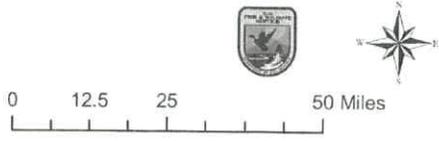
1. **Document lynx response to wind projects.** In some instances post-construction snow tracking surveys should be conducted to document lynx distribution and habitat use after the wind project is operational (compare to pre-construction baseline studies). Extent and duration of surveys should be discussed with the Service. Radio-telemetry studies and other research techniques may be warranted to document lynx movements and habitat use in relation to wind development.
2. **Adaptive management** – To date, the Service is unaware of scientific studies of the direct and indirect effects of wind on Canada lynx (or any land mammal). We encourage the wind industry to work with the Service to document response of land mammals (particularly Canada lynx) to wind projects and locate and share published and unpublished reports. An adaptive management plan, including long-term monitoring, may be warranted to address uncertainty.

Lynx 02-23-09



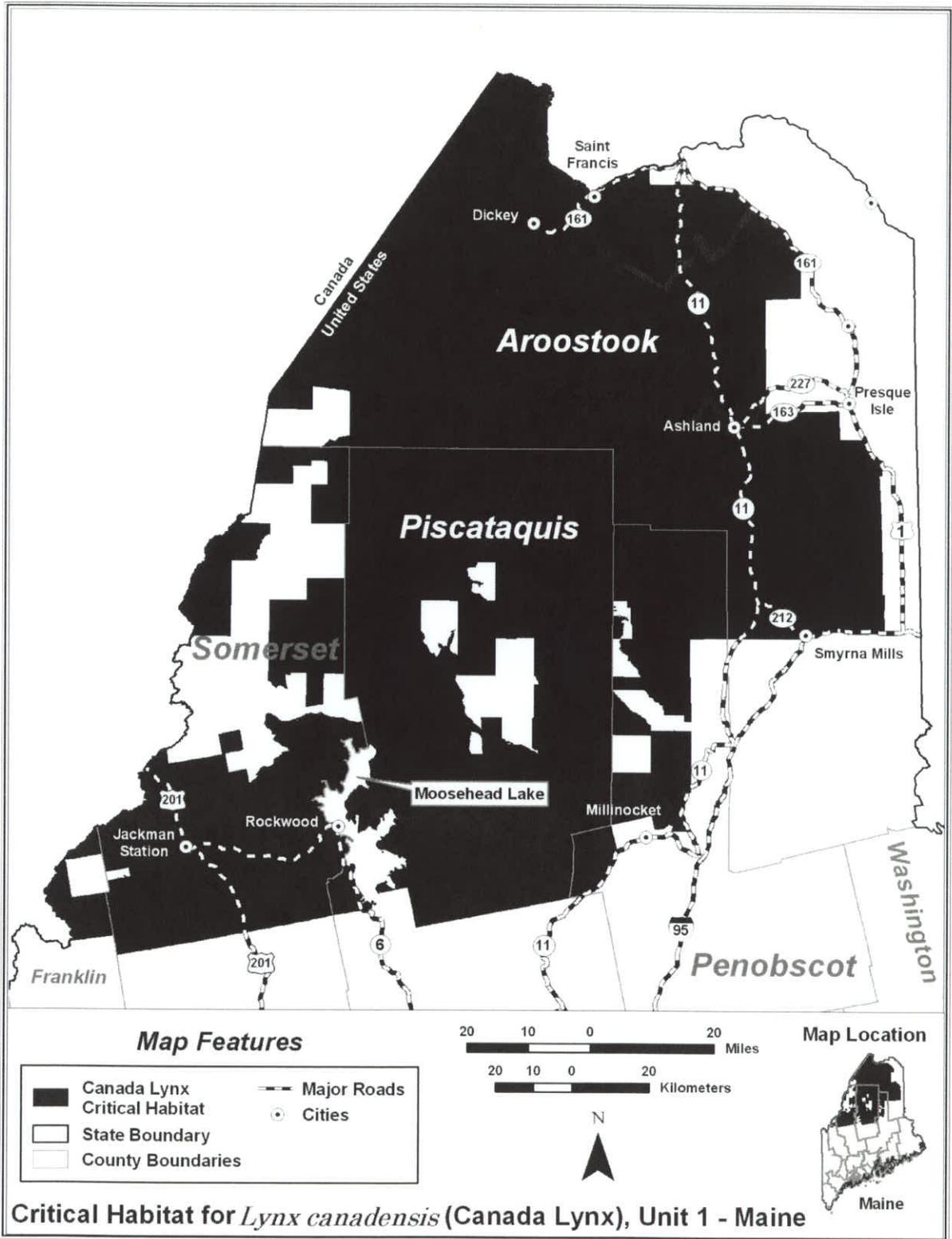
**Legend**

 Canada\_Lynx\_Review\_Area\_2008



Data from USFWS, MDIFW & MNAP.

Data map made; file name: map maker.





# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Maine Field Office – Ecological Services  
17 Godfrey Drive, Suite #2  
Orono, ME 04473  
Phone: (207) 866-3344 Fax: (207) 866-3351

### **Guidelines for Building and Operating Wind Energy Facilities in Maine Compatible with Federal Fish and Wildlife Regulations**

Developed by the Maine Field Office, U. S. Fish and Wildlife Service  
November, 2009

**Background:** Wind energy is renewable, produces no emissions, and can be an environmentally friendly technology. Development of wind energy is endorsed by the Secretary of the Interior. However, wind energy facilities can adversely affect fish and wildlife and their habitats. The Service's mission is conservation of fish and wildlife in the public trust. Our goals are to ensure renewable energy is fish, wildlife and habitat friendly and to make informed decisions and recommendations based on sound environmental assessment. Project review and permitting will be expedited when projects avoid, minimize, and mitigate adverse effects to federal trust resources.

Proper siting of turbines continues to be our most critical concern related to wind energy development - both to avoid and minimize wildlife mortality and habitat fragmentation. As more facilities are built, the cumulative effects of this rapidly growing industry may initiate or contribute to the decline of some wildlife populations. The potential harm to these populations from an additional source of mortality makes careful evaluation of the siting and effects of proposed facilities essential.

The Service is currently participating on a Federal Advisory Committee to develop national guidelines for site selection, evaluation, construction, and operation of wind energy facilities across the country. These new guidelines will be posted on the Service's national wind energy web page (<http://www.fws.gov/habitatconservation/wind.html>). Until new guidelines are prepared, wind energy developers and their consultants should consult the Service's *Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines* (2003) are available at the same website.

**Purpose:** We provide these guidelines so you can make an informed decision regarding site selection, project design, and address the requirements of federal fish and wildlife legislation. These guidelines also provide information on Service wind energy guidance documents and wildlife species that we consider during the formal consultation process for construction projects. We hope this information assists you during your initial pre-site considerations and project design and encourage you to consult with us early in your wind energy development process. The project review and permitting process will proceed more quickly if projects avoid, minimize, and mitigate adverse effects to federal trust resources. We used the Service's interim guidance



as a model for developing the guidance that follows, but stepped them down to make the guidance more relevant for Maine wind energy developers.

**Legal authorities:** This guidance advises you of federal wildlife laws applying to wind power, including the Endangered Species Act as amended (16 U.S.C. 1531-1543), Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250), and Migratory Bird Treaty Act (16 U.S.C. 703-712).

**Endangered Species Act (ESA):** Under Section 7 of the ESA federal agencies that permit or fund wind energy projects must determine if a project may affect federally listed species. If the federal agency determines that a project has “no effect” on a listed species or their critical habitat, they do not need to seek the concurrence of the Service. If the federal agency determines that a project is “not likely to adversely affect” a listed species, the agency must explain the basis for their determination and seek the written concurrence of the Service. Projects that have an “adverse effect” on a listed species require formal Section 7 consultation with the Service.

Unauthorized take of federally-listed species is prohibited under Section 9 of the ESA. If take of a listed species is anticipated, wind developers are encouraged to contact the Service to discuss obtaining an incidental take permit under Section 10 of the ESA, which involves developing a Habitat Conservation Plan.

Several federally listed species could be affected by wind power projects in Maine. The federally-threatened Canada lynx occur throughout northern Maine. Critical habitat was designated in March 2009 in northwestern Maine. The endangered Atlantic salmon Gulf of Maine Distinct Population Segment encompasses all naturally spawned and conservation hatchery populations of anadromous Atlantic salmon whose freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River and wherever these fish occur in the estuarine and marine environment. Critical habitat was designated throughout much of this area in June 2009. The federally threatened piping plover and roseate tern nest along the coast of Maine. Other federally-listed species occur in Maine and could occur in your project area.

**Bald and Golden Eagle Protection Act (BGEPA):** Although the bald eagle has recovered such that it no longer is protected under the ESA (August 9, 2007), it remains protected from take under the Bald and Golden Eagle Protection Act (BGEPA)(16 U.S.C. 668-668d) and the Migratory Bird Treaty Act (16 U.S.C. 703-712). “Take” means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. The term “disturb” under the BGEPA means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior (72 FR 31332, June 5, 2007). It is the responsibility of landowners and project proponents to determine whether their project will take or disturb eagles. A permit is necessary to avoid potential liability for take.

The U.S. Fish and Wildlife Service prepared National Bald Eagle Management Guidelines (<http://www.fws.gov/migratorybirds/CurrentBirdIssues/NationalBaldEagleManagementGuidelines.pdf>) to help landowners, land managers and others meet the intent of BGEPA and avoid disturbing bald eagles. Please note that our National Bald Eagle Guidelines do not provide guidance for large development projects like wind power projects.

The Service published a final rule explaining policies and procedures for applying for incidental take permits under the BGEPA (FR 74 46836-46879), which became effective on November 10, 2009. Draft *Implementation Guidance for Eagle Take Permits* will soon be distributed for public notice and comment and will provide further details on application requirements and procedures. The Service will soon release new national *Draft U. S. Fish and Wildlife Service Raptor Conservation Measures* for public notice and comment, which will specifically address lethal infrastructure projects such as wind power. The measures will also provide the interim guidance for golden eagle disturbance until species-specific guidance can be developed.

With extensive habitat and over 500 nesting pairs of bald eagles in Maine, nesting, migrating, wintering, summering, and transient bald eagles occur throughout the state. Maine was the last state to support nesting golden eagles in the eastern U. S. (up to 1999), and a small (100+ pairs), but growing population nests immediately north in Quebec and Labrador. Golden eagles nest in the Gaspé region of Quebec, have been seen in Maine in recent years during the breeding season, and may reoccupy Maine in the future.

Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA): The MBTA prohibits the taking of migratory birds, their eggs, parts, and nests. While the MBTA has no provision for allowing an unauthorized take, we recognize that some birds may be killed at structures such as wind turbines even if all reasonable measures to avoid take are implemented. We encourage wind power proponents to utilize the Service's wind energy guidelines, complete appropriate pre- and post-construction studies, and to site and operate wind projects to avoid and minimize take of migratory birds.

Bats: There are no federal regulations protecting bats, however, the Service encourages you to incorporate measures to avoid and minimize risk to bats. The federally endangered Indiana bat is not known to occur in Maine.

Some wind energy projects have been especially injurious to bats. Foremost, the potential exists for death to bats from collision or "barotraumas" (low pressure damage to lungs) within the rotor-swept area of wind turbines. The potential for mortality of bats is affected by many factors but location of the wind turbines seems to be one of the most important. The potential for harm makes careful evaluation of wind facilities essential.

Wetlands: Your project will likely require bridging, filling, or degrading certain wetlands or other waters of the United States under jurisdiction of section 404 of the Clean Water Act, which may require permits be acquired from the U.S. Army Corps of Engineers. The Corps of Engineers requires project proponents to avoid, minimize, and mitigate wetland impacts, and the Service strongly supports this sequential approach to permitting. The federal "nexus" of wetland

permitting by the Army Corps may require ESA consultation. The Service may provide recommendations to the Army Corps to avoid and minimize effects to fish and wildlife in issuing Clean Water Act permits.

**Organization:** The following guidelines provide Maine wind project developers with methods to assess potential effects, design, and operate a wildlife-friendly wind facility. We have organized these steps into three stages of wind facility development:

Stage 1: Site evaluation and selection

Stage 2: Project design and construction

Stage 3: Facility operation, monitoring, and adaptive management.

Each proposed wind power development site is unique and requires detailed, individual evaluation. We encourage wind energy proponents to develop site evaluation and pre- and post-construction surveys simultaneously with the Service, Maine Department of Inland Fisheries and Wildlife (MDIFW), and appropriate state and federal agencies. Site evaluations are important to select appropriate areas for wind development where adverse effects to wildlife and habitats can be avoided or minimized. Preconstruction surveys may allow for the project to be designed in such a way to further avoid or minimize impacts. As with all development projects, we encourage wind developers to consult early and consult often with our field office to minimize impacts to fish and wildlife. Doing so will facilitate permit review and result in compliance with federal legislation.

### **Stage 1: Site Evaluation and Selection**

The first step in the assessing potential wind power sites is to conduct a regional evaluation of possible project locations to avoid adverse effects to fish and wildlife resources, wetlands, and sensitive ecosystems. Large project developers of all kinds typically conduct a regional evaluation of potential sites using information in the public domain and contacts with the Service, MDIFW, Maine Natural Areas Program, and other agencies. Wind developers are encouraged to use the site evaluation protocol in Appendix 1 of the *Service's Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines*. Information should be evaluated on federal and state-listed species and their critical habitats; bald and golden eagles; migration corridors for birds, bats, and other wildlife; characterization of wildlife habitats present including wetlands; and proximity to state or national parks or wildlife refuges. If state and federal agencies lack data on these natural resources, project proponents are encouraged to seek help in designing studies to secure this information. The purpose of this reconnaissance is to identify and exclude sites with special designation and/or particularly high risks to fish and wildlife, identify sites that may be promising for wind power, and ultimately select a site that meets the wind developer's requirements while avoiding and minimizing impacts to fish and wildlife.

### **Stage 2: Project Design and Construction**

After an appropriate wind development site is selected where impacts to fish and wildlife remain a concern, attention should be given to avoiding and minimizing impacts to fish and wildlife

through careful project design. If endangered species are present, consultation should begin with federal permitting agencies and the Service.

The following recommendations for wind energy development in Maine are intended to assist developers who are in the planning and design process. These recommendations will further avoid and minimize adverse effects to wildlife and their habitats and may evolve over time as new federal guidelines are developed and additional experience, monitoring and research, and adaptive management practices document how best to avoid and minimize impacts to wildlife. The Service will work with developers, the State, and other stakeholders to evaluate, revise, and update these recommendations. If necessary, additional recommendations may be made to address site-specific concerns.

### **Recommendations for addressing wildlife concerns in the development of wind energy projects in Maine.**

1. When sites are being considered for potential wind power development (prior to placement of met towers) we encourage developers and their consultants to promptly contact our office to request information on federal trust species in the area. It is important that you identify your project as a potential wind energy project so that we can provide you with the best information and recommendations. The Service recommends development and agency review of pre-construction study plans that describe proposed assessments for endangered species, bald and golden eagle, migratory bird, wetland and other natural resources of concern.
2. To address the Endangered Species Act we will likely require surveys and/or habitat assessments for federally-listed species. These evaluations will be used by the federal agency authorizing, implementing, or funding the project to complete their evaluation of effects on listed species. If there is no federal connection to the project this information can be used to identify whether there is a risk of incidental take such that an incidental take permit may be necessary. Survey design may vary between sites in extent, methodology, and duration according to species and site. Survey designs should be developed with the Service to assure proper methods are being used and to determine where to focus additional investigations. Pre-construction surveys, whether in progress or completed, do not imply the Service's sanction for development of a site.
3. To address the Bald and Golden Eagle Protection Act we recommend surveys begin at least two years in advance of anticipated project construction to identify important eagle feeding, roosting, nesting or wintering areas eagle areas within four miles of your project area. Four miles is an average distance that Maine bald eagles may be expected to travel within their nesting territory or from roosting, foraging, or wintering areas.

If important eagle areas are identified by MDIFW or the Service or discovered via surveys, we recommend two years of pre-construction studies be completed to obtain baseline information on eagle nest productivity, document use of feeding, roosting, nesting or wintering areas, documenting movements in relation to proposed turbine locations (including an analysis of spatial use in relation to rotor swept zone), numbers

moving through the project area, movements in relation to meteorological conditions, and phenology of movements. For proposed wind projects located within four miles of eagle nests, we recommend that eagle movement studies be conducted for two years for at least 20 days each nesting season when adult eagles and their fledged young are most active (June through early October). Migrating eagle information should be collected as part of raptor migration surveys (see recommendation #4).

The purpose of surveys is to document the use and location of important eagle areas in relation to the proposed infrastructure, document eagle use of the project area, and ensure proper siting and placement of infrastructure to avoid take of eagles. For example, wind turbines sited between several bald eagle territories and a river that serves as the eagle's primary feeding area will have a higher risk of mortalities than it would if sited outside of the flight path of the eagles.

Eagle migration and movement data should be used to develop a quantitative risk assessment to determine likelihood of take of bald and golden eagles. If the risk assessment suggests that incidental take of eagles is likely, developers should employ measures to avoid take of eagles. Developers are advised to seek a BGEPA incidental take permit from the Service if take or disturbance cannot be avoided. Under a BGEPA permit, developers will likely be requested to conduct long-term post-construction studies of behavioral response to wind turbines, and monitoring of mortality, injury, and productivity so that the effects of the wind project on eagles can be monitored and understood. Additionally, an adaptive management plan likely will be required to regularly review and analyze eagle data, meet with the Service to discuss results, and develop appropriate measures to further reduce take of eagles. Mitigation for take may be necessary.

If the risk assessment suggests that take of eagles is not likely, but important eagle feeding, roosting, nesting or wintering areas are nearby or migratory eagles frequent the area, then long-term monitoring would be advised to periodically reassess risk to eagles under BGEPA.

4. To address Migratory Bird Treaty Act and bat concerns, we concur with recommendations for migratory bird and bat surveys found in MDIFW and Maine Department of Environmental Protection (MDEP) *Methodologies for Evaluating Bird and Bat Interactions with Wind Turbines in Maine*, Attachment H ([http://www.maine.gov/doc/mfs/windpower/pubs/report/wind\\_power\\_task\\_force\\_rpt\\_final\\_021408.pdf](http://www.maine.gov/doc/mfs/windpower/pubs/report/wind_power_task_force_rpt_final_021408.pdf)).

Bird and bat survey information will be used by the Service to evaluate and comment on overall site suitability, siting of turbines and other infrastructure, habitat fragmentation, and risk to birds and bats. In addition survey data may be used to inform permit review with other agencies, permit conditions, design and duration of post-construction studies, and adaptive management programs.

5. We encourage wind developers and their consultants to review and incorporate the Service's *Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines* (2003)(<http://www.fws.gov/habitatconservation/wind.pdf>) This document

provide robust data on environmental impacts that are comparable between the pre- and post-construction condition. Wind energy proponents should develop the post-construction study plan simultaneously with the Service and MDIFW. By doing so, federal and state regulatory agencies and the developer have a reasonable expectation of the operational measures to be employed if significant bird and bat mortality occurs. Examples of additional measures may include habitat manipulation and management on and around the project site, radar monitoring coinciding with migration, and discontinuing turbine operation during high risk conditions.

2. Post-construction mortality studies for birds and bats should be conducted for 2 to 3 years (both spring and fall migration seasons) within 5 years of initiating operation of a wind project. These studies should follow the MDIFW-DEP *Methodologies for Evaluating Bird and Bat Interactions with Wind Turbines in Maine*. Developers should consult with the Service and MDIFW when varying from recommended methodologies. Adaptive management, as described in the post-construction plan, should be employed to revise methodologies as new information is obtained.
3. Take of endangered species and bald and golden eagles should be reported to the Service within 24 hours of discovery. Migratory bird and bat mortality events of >25 individuals over a 24-hour period should be reported to the Service within 24 hours of discovery. Otherwise, bird and bat mortalities should be summarized in reports provided to the Maine Field Office at least annually.

In summary, the guidelines provided above and the Service's *Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines* (2003) are intended to guide wind power developers in Maine while protecting federal trust fish, wildlife and their habitats.

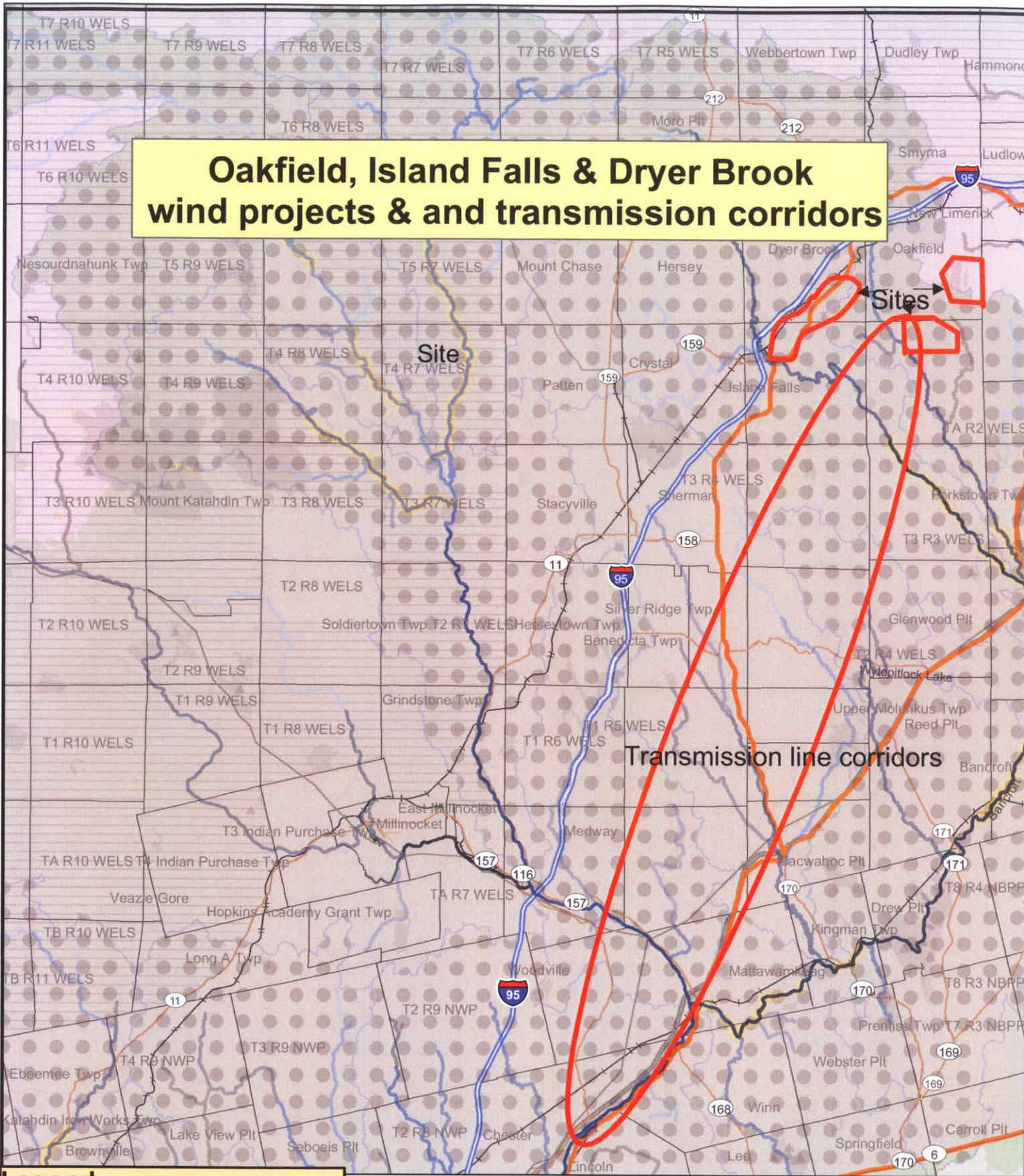
If you have any questions, please call or email:

Lori Nordstrom, Project Leader at (207) 866-3344 x111, lori\_nordstrom@fws.gov

Mark McCollough, endangered species biologist (Canada lynx, Furbish's lousewort, roseate terns, piping plovers, and bald eagles) at (207) 866-3344 x115 mark\_mccollough@fws.gov

Wende Mahaney, wetland and endangered species biologist (Atlantic salmon) at 866-3344 x118, wende\_mahaney@fws.gov

# Oakfield, Island Falls & Dryer Brook wind projects & transmission corridors

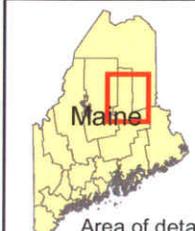


**Legend**

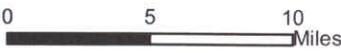
- Canada Lynx Section 7 review
- Canada Lynx Critical Habitat
- ATS Critical\_Habitat\_by\_HUC10
- ATS GOM\_DPS







Area of detail



0 5 10 Miles

Data from USFWS, MDFW & MNAP.



STATE OF MAINE  
DEPARTMENT OF CONSERVATION  
93 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0093

JOHN ELIAS BALDACCI  
GOVERNOR

ELIZA TOWNSEND  
COMMISSIONER

March 31, 2010

Brooke Barnes  
Stantec Consulting  
30 Park Drive  
Tosham, ME 04086

Re: Rare and exemplary botanical features, Proposed Potential Transmission Lines and Wind Development Areas, Project 195600518, Chester to Oakfield, Maine.

Dear Mr. Barnes:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request of March 1, 2010 for information on the presence of rare or unique botanical features documented within 250 feet of the two proposed transmission line alignments and at the potential wind development sites in the area between the Towns of Chester and Oakfield, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. For certain types of projects, we also incorporate review of landscape analysis sites, which are areas determined to have a high potential to support significant natural features. Our review involves examining maps, manual and computerized records, aerial photography, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

This finding is for project scoping purposes only and should not be considered as a final review of the proposed project. When specific location options for facilities and/or transmission lines have been determined and updated environmental assessments have been completed, a subsequent review request should be submitted to us for recommendations regarding impacts to significant natural features prior to application submittal.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are several botanical features documented along the potential transmission line corridors and within the potential wind development area.

Please refer to the table below and enclosed maps and fact sheets for more information about these features.

Specific commentary follows:

Hunt Ridge, Oakfield (Map 1). This site supports an exemplary Beech – Birch – Maple Forest. If wind infrastructure is planned within the natural community mapped here, please submit site plans for further commentary.

Dyer Brook and Robinson Mountain, Dyer Brook (Map 2). This site supports an exemplary Red Oak – Northern Hardwoods – White Pine Forest and a population of the rare plant Large Toothwort, *Cardamine maxima*. If wind infrastructure is planned within the natural community mapped here, please submit site plans for further commentary.

**Table 1. Rare and Exemplary Botanical Features**

Feature	Global Rank	State Rank	State Status	Occurrence Rank	Last Observed
Beech – Birch – Maple Forest (Map 1)	G3G5	S4	NA	Good	2004
Red Oak – Northern Hardwood Forest (Map 2)	GNR	S4	NA	Fair	2003
Large Toothwort, <i>Cardamine maxima</i> (Map 2)	G5	S1	Special Concern	Fair	2003
Streamshore Ecosystem (Map 3)		S4	NA	Good	2009
Small Yellow Water Crowfoot, <i>Ranunculus gmelinii</i> var. <i>purshii</i> (Map 3)	G5T5	S2	Threatened	Good	2008
Showy Lady's-slipper, <i>Cypripedium reginae</i> (Map 3)	G4	S3	Threatened	Good	2008
Marsh Valerian, <i>Valeriana uliginosa</i> (Map 3)	G4	S2	Special Concern	Good	2008
Swamp Fly-honeysuckle, <i>Lonicera oblongifolia</i> (Map 3)	G4	S3	Special Concern	Fair	2008
Northern Bog Sedge, <i>Carex gynocrates</i> (Map 3)	G5	S2	Special Concern	Good	2008
Eccentric Bog Ecosystem (Map 4)	GNR	S3	NA	Good	2007
Swarthy Sedge, <i>Carex adusta</i> (Map 5)	G5	S2	Endangered	Fair	1997

Alder Brook, Glenwood PLT (Map 3). This site supports an exemplary Streamshore Ecosystem and has indicators of enrichment. We recommend that you survey this area for rare calciphilic plant species.

Alder Brook Headwaters (Map 3). The rare plants at this site (Small Yellow Water Crowfoot, Showy Lady's-slipper, Marsh Valerian, Swamp Fly-honeysuckle, and Northern Bog Sedge) occur at the MEPCO Transmission Line, at the Headwaters of Alder Brook site, along the potential easterly alignment. Some accommodation should be made to provide continued survival of these populations at this site.

Flinn Pond, T1 R5 WELS and Benedicta TWP (Map 4). The potential westerly alignment (Greenfield Glenwood Options 090209) intersects the edge of an Eccentric Bog Ecosystem at this site. The transmission line as proposed poses no concerns and should not impact the ecosystem.

Horseback, Chester (Map 5). A single stem of the rare Swarthy Sedge, an early successional species, was found on the existing R.O.W. of the potential westerly alignment in 1997. The alignment as proposed is not a concern for this population.

Skitacook Stream Flats, T4 R3 WELS and Linneus (Map 6). The potential alignment in this area crosses the easterly edge of this landscape analysis site. We recommend that you survey the area for rare species in this area of the transmission line alignment.

Ebhorse Stream Bog, Woodville and Chester (Map 7). The potential alignment crosses through a landscape analysis site, however, we believe it is unlikely that any natural communities or ecosystems would be mapped at this site. We do, however, suggest botanical survey work where the northern white cedar grows on the northeast side.

Keene Bog, Chester (Map 8). This landscape analysis site has not been surveyed by MNAP and but we believe it has the potential for natural community mapping. The current alignment to the east of the existing easterly line (Oakfield T Line) is preferred. If the westerly alignment (Greenfield Glenwood Options 090209) is the preferred alignment, we suggest exploring options to move the line farther away from the bog on the southwest side of this site. Straightening the line by removing the last two angles before the terminus would sufficiently move the line from this bog.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of \$75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for \$300.00 for our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,



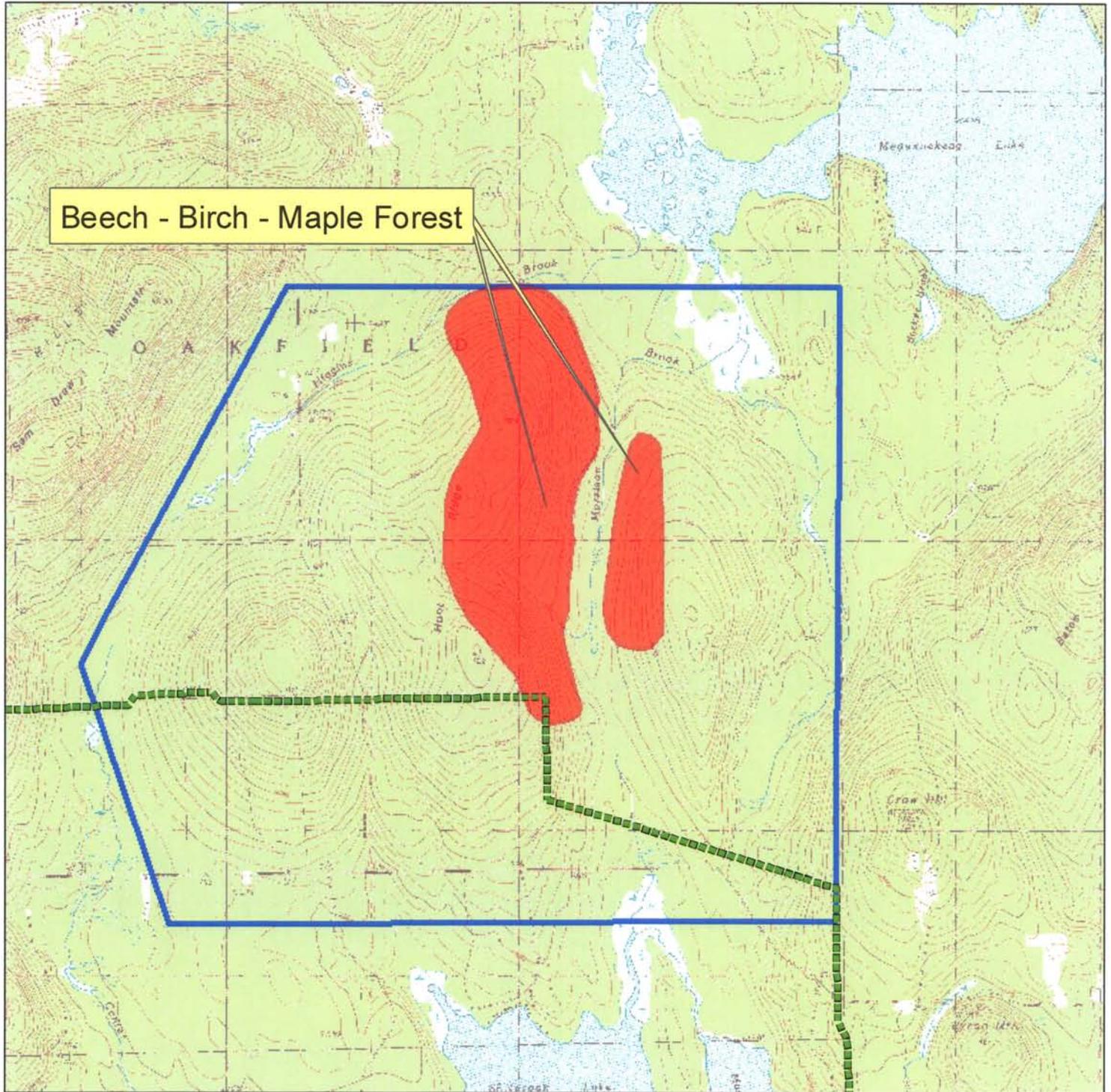
Lisa St. Hilaire  
Information Manager  
Maine Natural Areas Program  
207-287-8046

[Lisa.St.Hilaire@maine.gov](mailto:Lisa.St.Hilaire@maine.gov)

Enclosures

# Map 1. Hunt Ridge, Oakfield, Maine

## Potential Transmission Line Corridors and Potential Wind Development Areas Stantec PN 195600518



-  Natural Community
-  Potential Transmission Line Oakfield T Line
-  Approximate Project Boundary

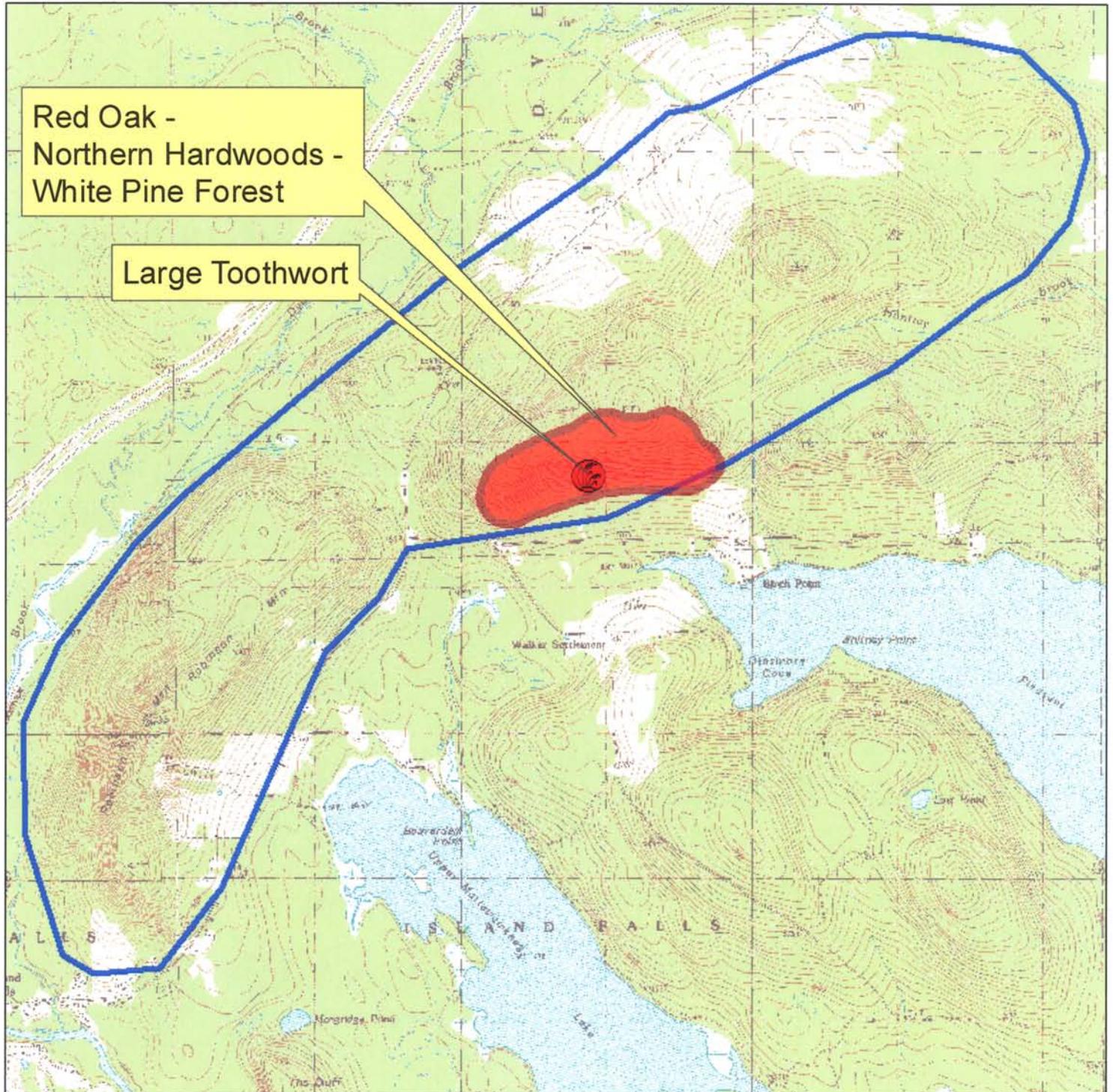
0 0.2 0.4 0.8 1.2 1.6 Miles

Maine Natural Areas Program  
March 2010



# Map 2. Dyer Brook and Robinson Mountain, Dyer Brook, Maine

Potential Transmission Line Corridors and  
Potential Wind Development Areas Stantec PN 195600518



-  Rare Plant
-  Natural Community
-  Approximate Project Boundary

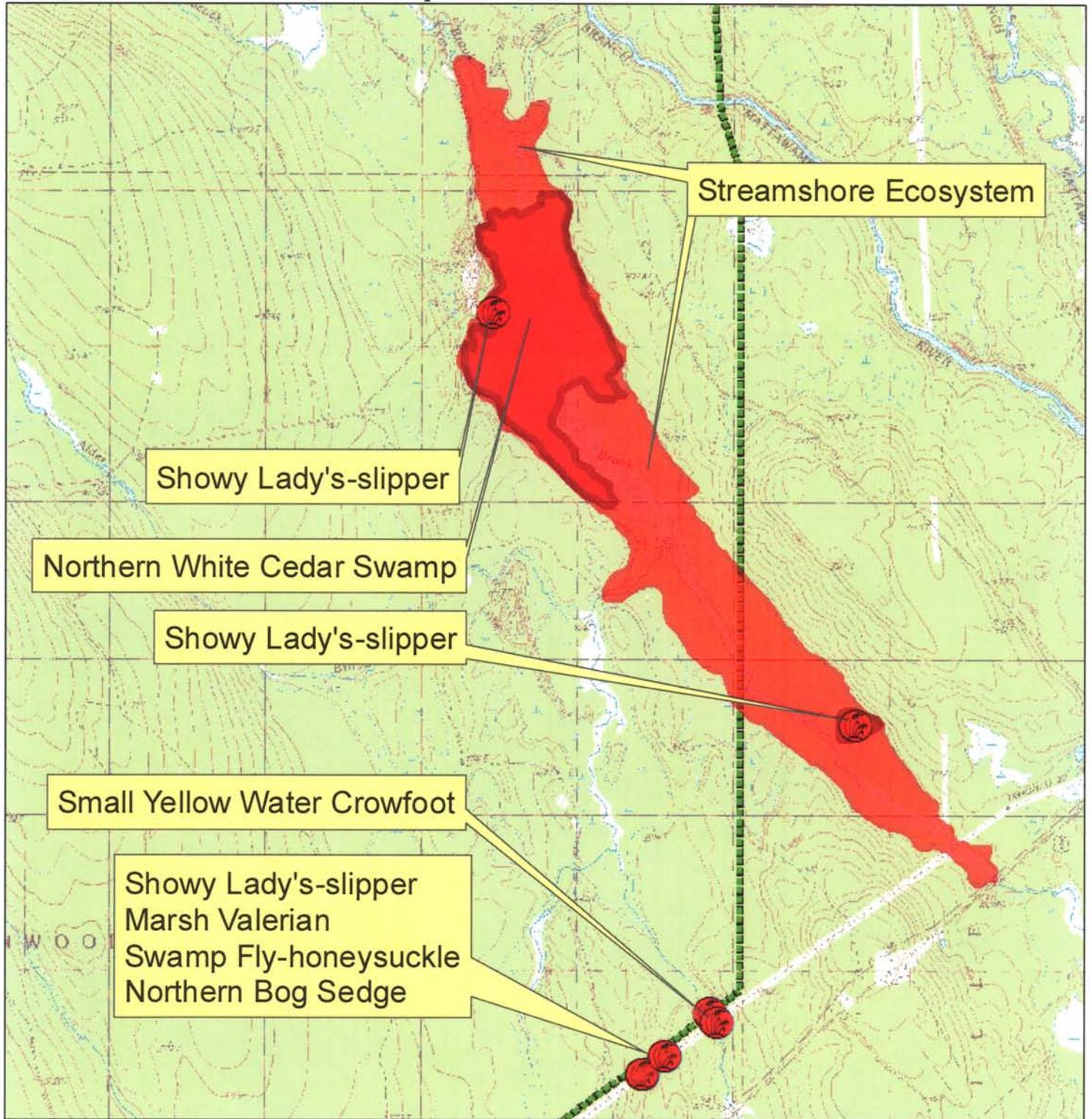
0 0.150.3 0.6 0.9 1.2  
Miles

Maine Natural Areas Program  
March 2010

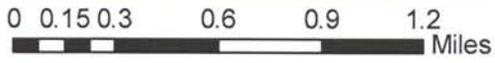


# Map 3. Alder Brook and Alder Brook Headwaters, Haynesville, Glenwood PLT, T3 R3 WELS

## Potential Transmission Line Corridors and Potential Wind Development Areas Stantec PN 195600518

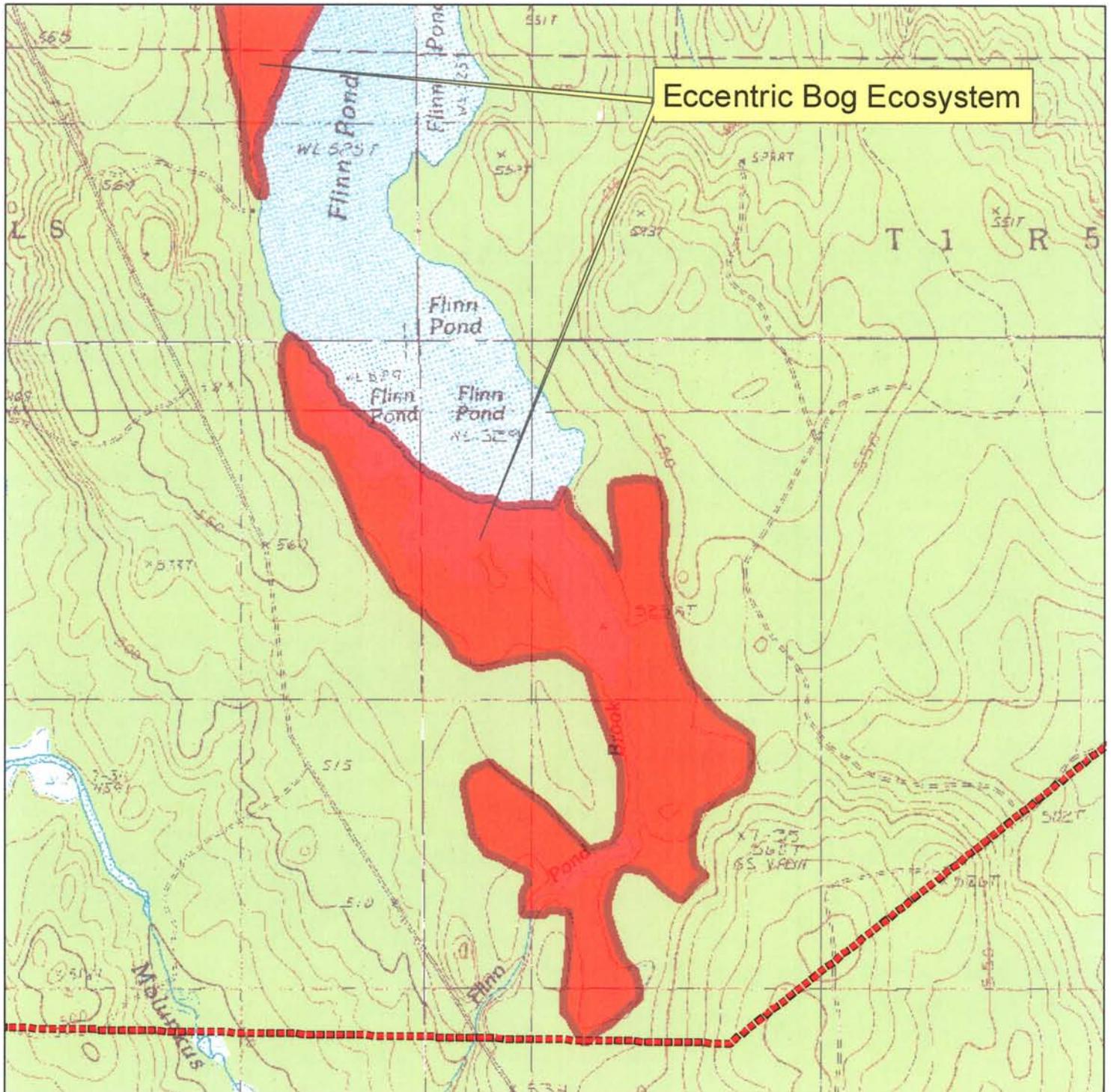


- Rare Plant
- Natural Community
- Potential Transmission Line Oakfield T Line



# Map 4. Flinn Pond, T1 R5 WELS, Maine

## Potential Transmission Line Corridors and Potential Wind Development Areas Stantec PN 195600518



Natural Community



Potential Transmission Line Greenfield Glenwood

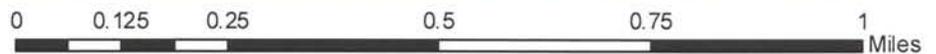
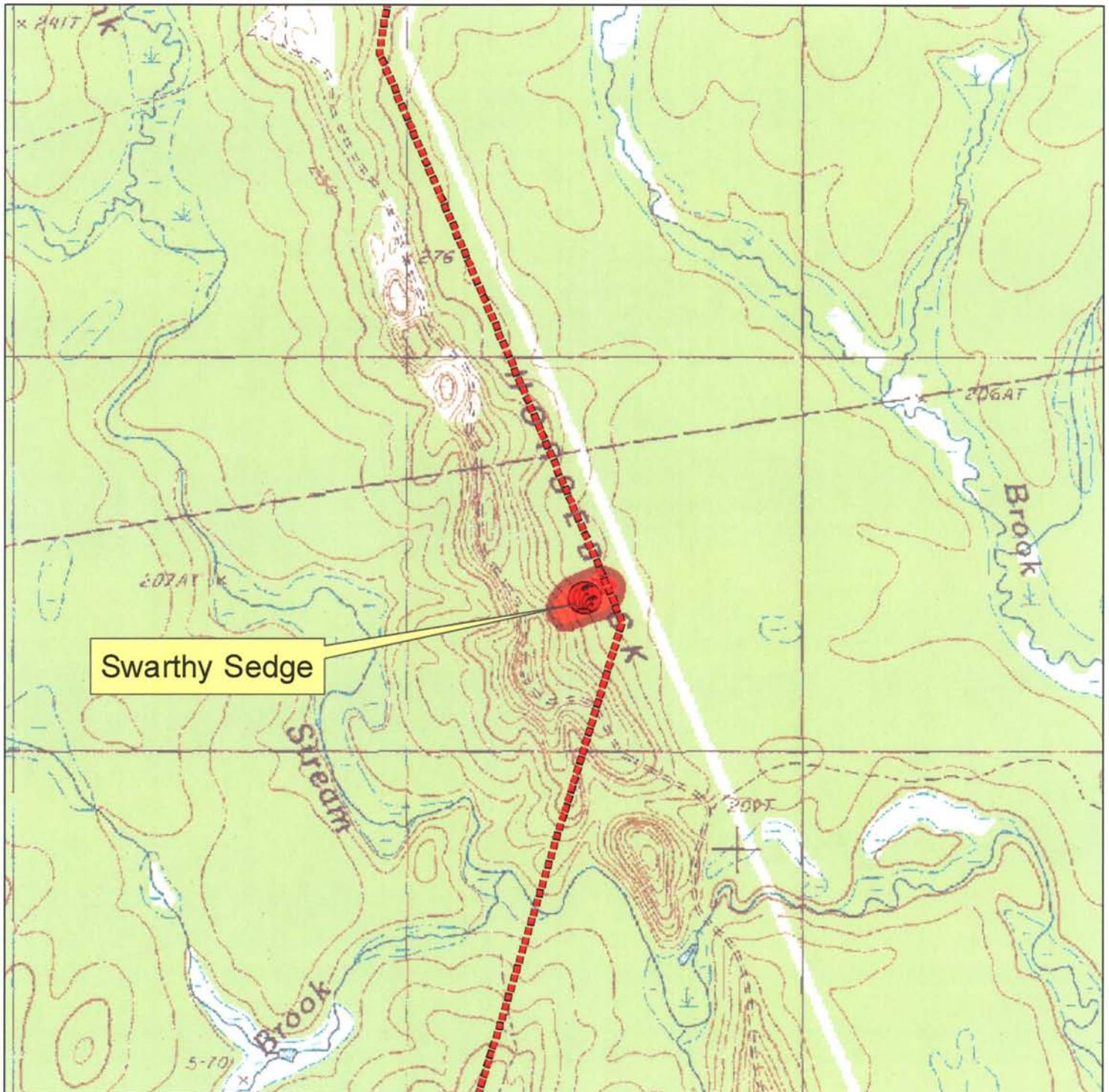
0 0.1 0.2 0.4 0.6 0.8 Miles

Maine Natural Areas Program  
March 2010



# Map 5. Horseback, Chester, Maine

## Potential Transmission Line Corridors and Potential Wind Development Areas Stantec PN 195600518



Rare Plant

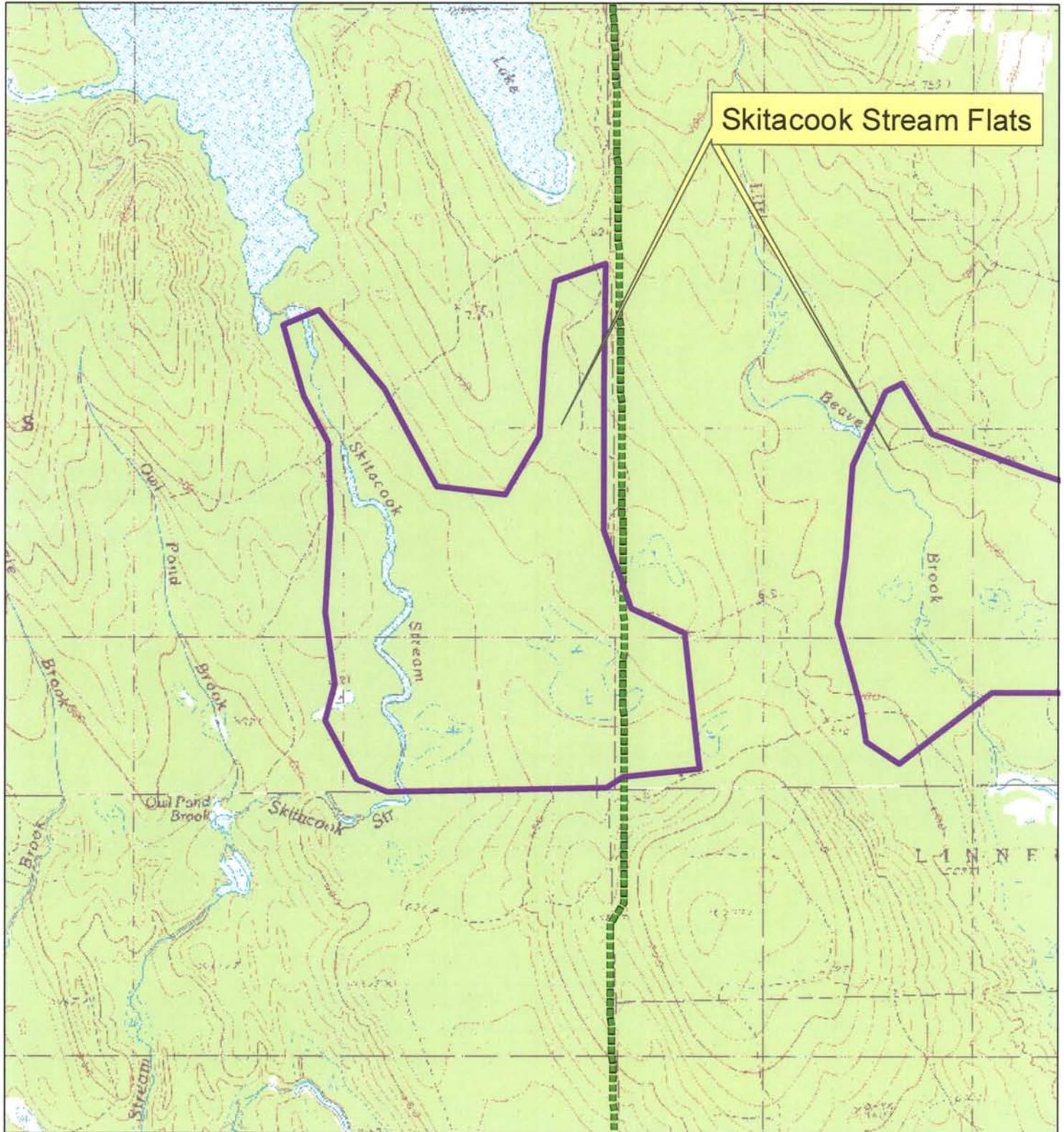


Potential Transmission Line Greenfield Glenwood

Maine Natural Areas Program  
March 2010



# Map 6. Skitacook Stream Flats, T4 R3 WELS, Linneus Potential Transmission Line Corridors and Potential Wind Development Areas Stantec PN 195600518



Landscape Analysis Site



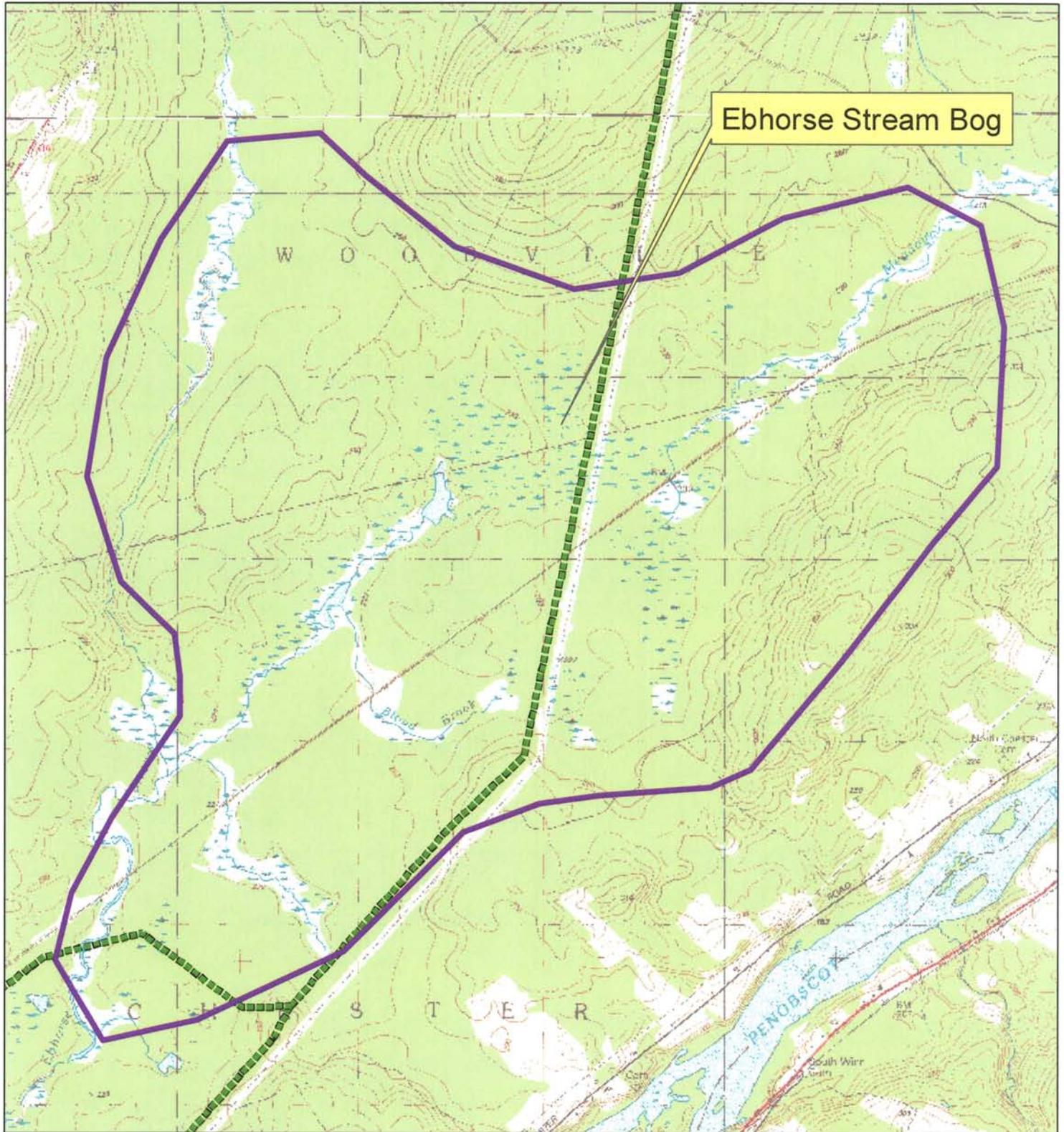
Potential Transmission Line Oakfield T Line

0 0.1250.25 0.5 0.75 1 Miles

Maine Natural Areas Program  
March 2010



# Map 7. Ebhorse Stream Bog, Woodville and Chester Potential Transmission Line Corridors and Potential Wind Development Areas Stantec PN 195600518



Landscape Analysis Site



Potential Transmission Line Oakfield T Line

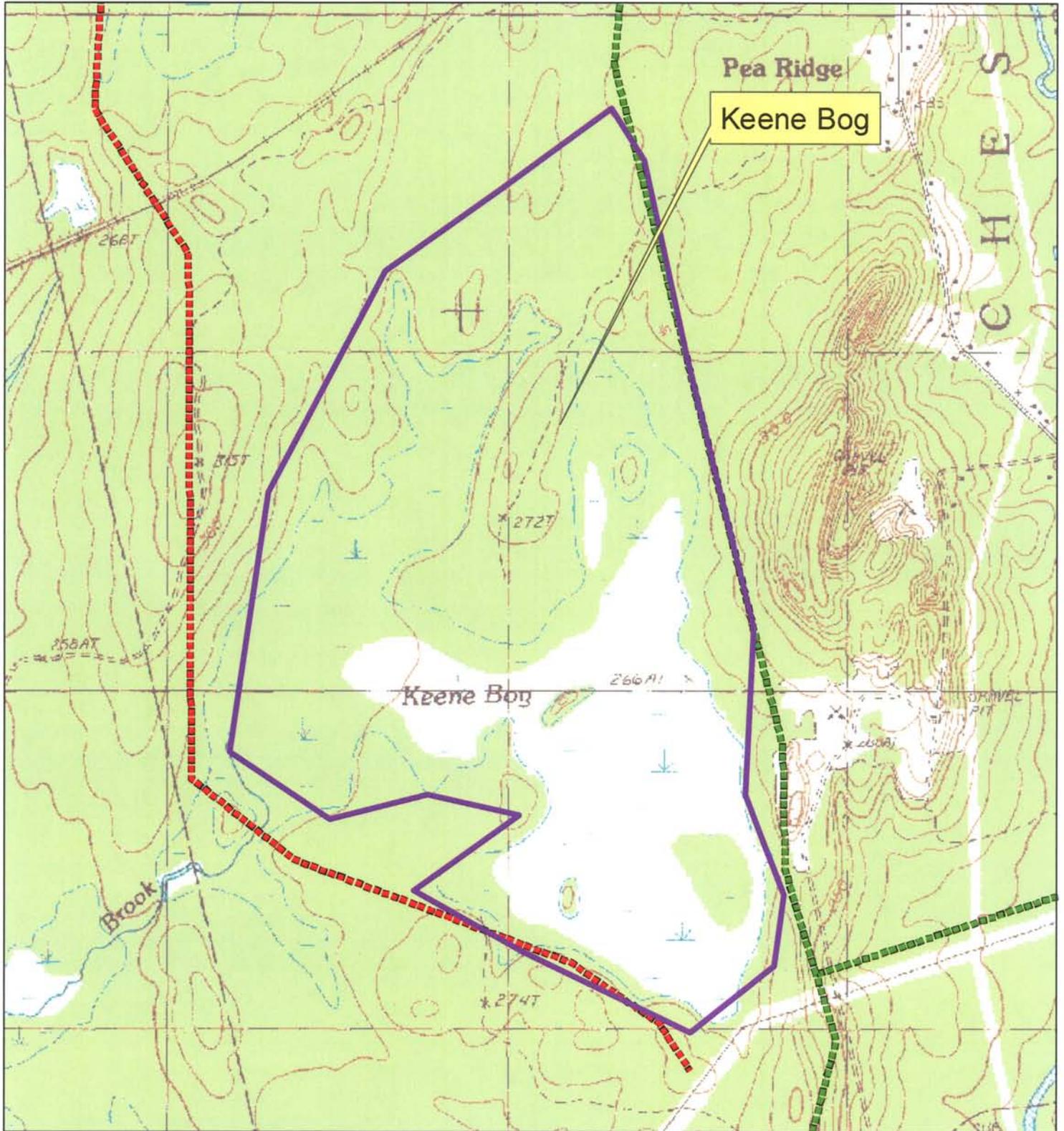
0 0.125 0.25 0.5 0.75 1 Miles

Maine Natural Areas Program  
March 2010



# Map 8. KeeneBog, Chester

## Potential Transmission Line Corridors and Potential Wind Development Areas Stantec PN 195600518



-  Landscape Analysis Site
-  Potential Transmission Line Greenfield Glenwood
-  Potential Transmission Line Oakfield T Line

0 0.05 0.1 0.2 0.3 0.4  
Miles

Maine Natural Areas Program  
March 2010





# Northern Hardwoods Forest

**State Rank S5**

## Community Description

These closed canopy forests are dominated by a combination of beech, yellow birch, and sugar maple. Paper birch, red maple, conifers, and red oak may be present at lower cover. Conifers and red oak can each have <25% cover. Striped maple is a common subcanopy tree. The variable shrub layer is dominated by tree regeneration. Cover, richness and composition vary with site conditions.

## Soil and Site Characteristics

Sites are typically found on the lower to middle portion of hillslopes (slopes generally 10-50%). Soils are generally mesic and well drained, though not deep (typically 15-50 cm) silt loams to sandy loams to loamy sands formed over glacial till, with pH 5.0-5.6; some occur on stabilized talus. Elevations range up to 2000'.

## Diagnostics

A combination of beech, sugar maple, and yellow birch distinguishes this type. Though red oak is often entirely absent, conifers and red oak can be present and have up to 25% cover each. The herb layer lacks rich site indicators such as Dutchman's breeches, maidenhair fern, and blue cohosh.



Diseased Beech Bark

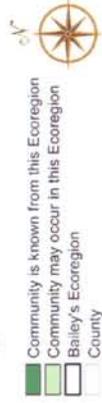
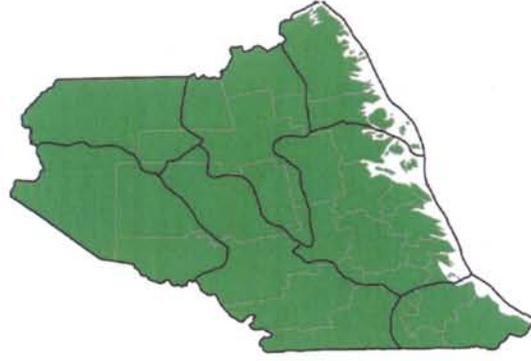
## Similar Types

Maple - Basswood - Ash Forests and Sugar Maple Forests are similar to, and often contiguous with, this type. In them, beech is far less abundant, white ash is usually well represented in the canopy, and the herb layer contains species indicative of rich-soil areas. Red Oak - Northern Hardwoods - White Pine Forests have a higher proportion of red oak and can have a higher proportion of conifers (>25%). Spruce - Northern Hardwoods Forests also have >25% conifers in the canopy.

## Conservation, Wildlife, and Management Considerations

This is the dominant hardwood type in Maine, and therefore it is extensively harvested and managed. Most management techniques diverge from the natural gap

## Location Map



## Characteristic Plants

These plants are frequently found in this community type. Those with an asterisk are often diagnostic of this community.

### Canopy

- American beech\*
- Eastern hemlock\*
- Paper birch\*
- Sugar maple\*
- Yellow birch\*

### Sapling/shrub

- American beech\*
- Hobblebush\*
- Striped maple\*
- Sugar maple\*
- Yellow birch\*

### Herb

- Bluebead lily\*
- Canada mayflower
- Shining clubmoss\*
- Starflower
- Striped maple\*
- Sugar maple\*

## Associated Rare Plants

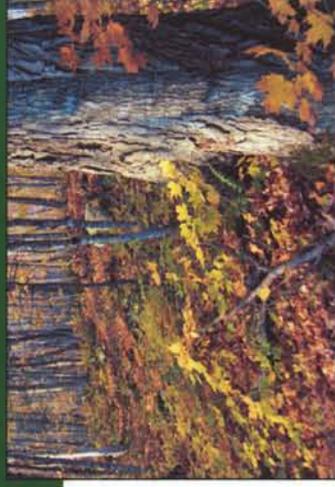
- Autumn coral-root
- Boreal bedstraw
- Broad beech fern
- Cut-leaved toothwort
- Nodding pogonia
- Tall white violet

## Associated Rare Animals

- Early hairstreak

## Examples on Conservation Lands You Can Visit

- Baxter State Park - Piscataquis Co.
- Big & Little Squaw Mountain Public Lands - Piscataquis Co.
- Bigelow Preserve Public Lands - Franklin/Somerset Co.
- Deboullie Ponds Public Lands - Aroostook Co.
- Grafton Notch State Park & Mahoosuc Public Lands - Oxford Co.
- White Mountain National Forest - Oxford Co.



Northern Hardwoods Forest

pattern, which is at the scale of single trees or small groups of trees. Large (>1000 acres) examples reflecting only natural disturbance are scarce statewide, and intact examples in central and southern Maine tend to be smaller and more isolated.

Beech scale disease (Nectria) has devastated beech in many stands in eastern Maine. Although beech regenerates vigorously from sprouts after the trees have died, most sprouts succumb to the disease by the time they reach maturity. There are indications that some trees may express a genetic resistance to this disease.

## Distribution

One of the predominant forest types in the New England - Adirondack Province and Laurentian Mixed Forest Province. Extends east, west, and north from Maine; occurs only as scattered areas southward.



**Landscapes**  
 Pattern: Matrix, typically hundreds of quality patches usually now smaller.

American Beech with Beech Nuts



Maine Department of Conservation  
Natural Areas Program

*Carex adusta* Boott

**Swarthy Sedge**

**Habitat:** Dry, open places. [Rocky coastal (non-forested, upland)]

**Range:** Newfoundland south to New Brunswick, Maine and northern New York, west to Michigan, Minnesota, and British Columbia.

**Phenology:** Fruits July - September.

**Family:** Cyperaceae

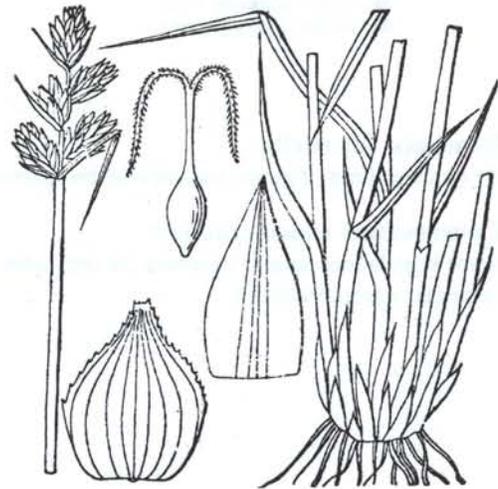


Illustration from Britton & Brown's Illustrated Flora of the Northern United States and Canada, 2nd ed.

**Aids to Identification:** Identification of species of the genus *Carex* is usually difficult and dependent upon rather technical characters. *C. adusta* is in the section *Ovales* and it is distinguished by the following characteristics: densely tufted growth; lower leaves are merely scales; 4-15 spikes are crowded into a cluster 2-3 cm long; perigynia are 4.2-5.2 mm long and half as wide, with fine dorsal nerves; floral scales as long as the perigynia; upper portion of the leaf sheath is smooth, lacking minute papillae.

**Ecological characteristics:** Known to occur in Maine on sandy roadsides and disturbed, dry clearings. This is a pioneer species of open areas that have been recently disturbed by fire or mechanical means, so that mineral soil is exposed. In Maine, it seems to be most common in the coastal region.

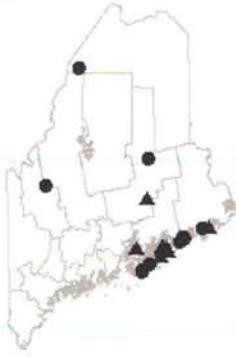
**Synonyms:**

**Rarity of *Carex adusta***

<b>State Rank:</b>	S2	Imperiled in Maine because of rarity or vulnerability to further decline.
<b>New England Rank:</b>	Division 2	Regionally rare plant: Fewer than 20 current (seen since 1970) occurrences within New England.
<b>Global Rank:</b>	G5	Demonstrably widespread, abundant, and secure globally.

**Status of *Carex adusta***

<b>Federal Status:</b>	None	No Federal Status.
<b>State Status:</b>	Endangered	Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered. Listing criteria met: Few individuals, At edge of range, Declining populations, Vulnerable to human activity



- ▲ Historical (before 1982)
- Recent (1982 - present)

### Known Distribution in Maine:

This rare plant has been documented from a total of 14 town(s) in the following county(ies): Aroostook, Franklin, Hancock, Knox, Penobscot, Washington.

**Dates of documented observations are:** 1883, 1890, 1891 (2), 1897, 1898, 1899 (2), 1914, 1916, 1949, 1988, 1991 (3), 1995 (2), 1997 (3), 1999, 2000 (2), 2002

### Reason(s) for rarity:

At southern limit of range; habitat may be ephemeral.

### Conservation considerations:

Some populations appear to persist for only a few years. All occur in locations where natural or artificial disturbance maintains open conditions.

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Plant rarity and status is based on 2008 data and the rest of the information in this fact sheet was downloaded from the Natural Areas Program's Biological and Conservation Database on 06 MAY 2004. We are grateful to our Botanical Advisory Group for additional information on particular species, and in particular, to Arthur Haines for his assistance with identifying characteristics and taxonomic questions. Nomenclature follows Haines and Vining's *Flora of Maine* (V.F. Thomas Press, 1998); where older works refer to a plant by another name, it is given under "Synonyms". The Natural Areas Program, within the Department of Conservation, maintains the most comprehensive source of information on Maine's rare or endangered plants and rare or exemplary natural communities, and is a member of the Association for Biodiversity Information.

If you know of locations for this plant or would like more information on this species,  
 please contact the Natural Areas Program  
 State House Station 93, Augusta, Maine 04333; telephone (207) 287-8044.





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*Carex gynocrates* Wormsk. ex Drej.

**Northern Bog Sedge**

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**Habitat:** Peaty soils, often with circumneutral pH.  
[Conifer forest (forest, upland); Forested wetland]

**Range:** Circumboreal, south to Pennsylvania, Michigan, Minnesota, and Utah.

**Phenology:** Fruits June - August.

**Family:** Cyperaceae

**Aids to Identification:** Identification of species of the genus *Carex* is usually difficult and dependent upon rather technical characters. *C. gynocrates* is the only member of the section *Dioicae* in this region. It is identified by its loosely rhizomatous growth, lenticular achenes, slender leaves (1mm wide), solitary spike, and ovoid perigynia, 3-3.5mm long.

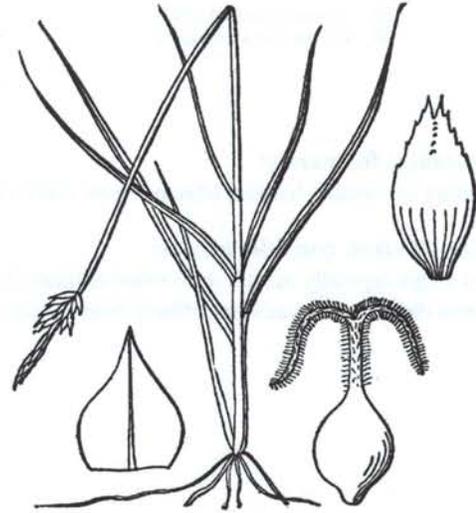


Illustration from Britton & Brown's Illustrated Flora of the Northern United States and Canada, 2nd ed.

**Ecological characteristics:** This sedge is often found in association with Northern White Cedar fens in Maine.

**Synonyms:** Sometimes placed as subspecies *gynocrates* in the circumboreal taxon *C. dioica* (Gleason and Cronquist second ed., 1991), but separated by most authors as a distinct species.

**Rarity of *Carex gynocrates***

<b>State Rank:</b>	S2	Imperiled in Maine because of rarity and vulnerability to further decline.
<b>New England Rank:</b>	INDT	Indeterminate. Under review for inclusion in appropriate division. Taxonomy, nomenclature, or status not clearly understood.
<b>Global Rank:</b>	G5	Demonstrably widespread, abundant, and secure globally.

**Status of *Carex gynocrates***

<b>Federal Status:</b>	None	No Federal Status.
<b>State Status:</b>	Special Concern	
<b>Proposed State Status:</b>	Special Concern	Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.



### Known Distribution in Maine:

This rare plant has been documented from a total of 11 town(s) in the following county(ies): Aroostook, Penobscot, Piscataquis.

**Dates of documented observations are:** 1898, 1984, 1987, 1989 (2), 1990, 1991, 1993, 2001 (2), 2002, 2003

- ▲ Historical (before 1983)
- Recent (1983 - present)

### Reason(s) for rarity:

Scarcity of suitable habitat. May be more common than records indicate.

### Conservation considerations:

This sedge typically occurs in forested habitats. Effects of logging are unknown, but partial removal of the canopy would be less likely to have adverse effects than would complete removal of the canopy.

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The information in this fact sheet was downloaded from the Natural Areas Program's Biological and Conservation Database on 06 MAY 2004. We are grateful to our Botanical Advisory Group for additional information on particular species, and in particular, to Arthur Haines for his assistance with identifying characteristics and taxonomic questions. Nomenclature follows Haines and Vining's *Flora of Maine* (V.F. Thomas Press, 1998); where older works refer to a plant by another name, it is given under "Synonyms". The Natural Areas Program, within the Department of Conservation, maintains the most comprehensive source of information on Maine's rare or endangered plants and rare or exemplary natural communities, and is a member of the Association for Biodiversity Information.

If you know of locations for this plant or would like more information on this species,  
please contact the Natural Areas Program  
State House Station 93, Augusta, Maine 04333; telephone (207) 287-8044.





Maine Department of Conservation  
Natural Areas Program

*Cypripedium reginae* Walt.

Showy Lady's-slipper

**Habitat:** Circumneutral peatlands (often at edges) or sunlit openings of mossy woods. [Forested wetland; Open wetland, not coastal nor rivershore (non-forested, wetland)]

**Range:** Newfoundland to North Dakota and Manitoba, south in Appalachians to Georgia.

**Phenology:** In Maine flowers late June to July.

**Family:** Orchidaceae

**Aids to Identification:** The largest and showiest of our lady's-slippers. Foliage of non-flowering plants emerging in early spring may be mistaken for false hellebore. Flowering plants are unique with their tall leafy stems bearing one or two large flowers with white petals and sepals contrasting with magenta pink pouch. Densely pubescent throughout, the hairs may cause a rash similar to poison ivy.

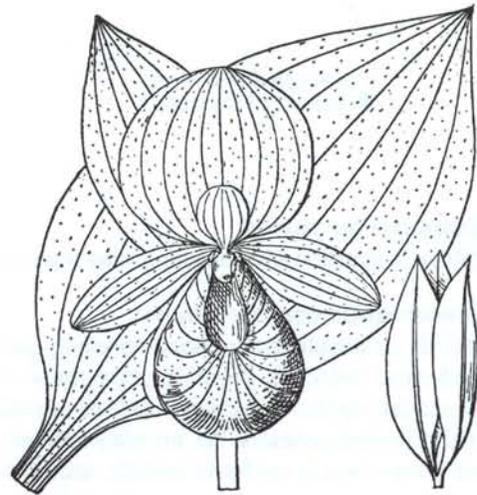


Illustration from Britton & Brown's Illustrated Flora of the Northern United States and Canada, 2nd ed.

**Ecological characteristics:** Showy lady's-slippers apparently require constant moisture, some sunlight and circumneutral soil conditions. In acid bogs their roots go under the acid *Sphagnum* to more neutral groundwater below. In clearings or woods edges colonies may be very large and flowering abundant, but plants in deep shade often lack flowers. *C. reginae* seeds seem to germinate best at depths of at least 5 cm. It has been suggested that this may account for the presence of dense colonies in deer yards where the deer hooves may help to push seeds to the appropriate depth. *C. reginae* takes about 15 years to reach flowering age, which explains why they are slow to reappear after colonies have been dug up.

**Synonyms:** Formerly known as *Cypripedium spectabile* Salisb.

**Rarity of *Cypripedium reginae***

<b>State Rank:</b>	S3	Rare in Maine.
<b>New England Rank:</b>	None	
<b>Global Rank:</b>	G4	Widespread, abundant, and apparently secure globally, but with cause for long-term concern.

**Status of *Cypripedium reginae***

<b>Federal Status:</b>	None	No Federal Status.
<b>State Status:</b>	Threatened	Rare and, with further decline, could become endangered; or federally listed as Threatened. Listing criteria met: Declining populations, Vulnerable to human activity



○ Historical (before 1983)  
● Recent (1983- present)

**Known Distribution in Maine:**

This rare plant has been documented from a total of 52 town(s) in the following county(ies): Androscoggin, Aroostook, Cumberland, Hancock, Kennebec, Knox, Oxford, Penobscot, Piscataquis, Somerset, Washington.

**Dates of documented observations are:** 1874, 1880, 1889 (2), 1891, 1896, 1903, 1904, 1906, 1907 (2), 1908, 1910 (3), 1914, 1924, 1925, 1935, 1940 (2), 1943, 1950, 1978, 1981 (6), 1982, 1983 (3), 1984, 1985, 1989 (3), 1990 (4), 1991, 1992, 1993, 1995, 1997, 1998 (3), 19XX (2), 2000 (2), 2001 (2), 2002 (6)

**Reason(s) for rarity:**

Habitat destruction and collecting, also scarcity of suitable habitat.

**Conservation considerations:**

Orchids are popular among some speciality gardeners, and populations of this species are vulnerable to unscrupulous or uneducated collectors. Plants dug from the wild usually do not survive; more importantly, removing these plants harms the natural population and may cause its eventual disappearance. Tissue-culture propagation of this species has been tried in limited instances, but any plants offered for sale have almost certainly been dug from the wild. This orchid grows and flowers best in moderate sunlight, and partial removal of the canopy can benefit the populations, if done correctly.

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Plant rarity and status is based on 2008 data and the rest of the information in this fact sheet was downloaded from the Natural Areas Program's Biological and Conservation Database on 29 APR 2004. We are grateful to our Botanical Advisory Group for additional information on particular species, and in particular, to Arthur Haines for his assistance with identifying characteristics and taxonomic questions. Nomenclature follows Haines and Vining's *Flora of Maine* (V.F. Thomas Press, 1998); where older works refer to a plant by another name, it is given under "Synonyms". The Natural Areas Program, within the Department of Conservation, maintains the most comprehensive source of information on Maine's rare or endangered plants and rare or exemplary natural communities, and is a member of the Association for Biodiversity Information.

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Maine Department of Conservation  
Natural Areas Program

*Lonicera oblongifolia* (Goldie) Hook.

Swamp Fly-honeysuckle

- Habitat:** Bogs, swampy thickets and wet woods.  
[Forested wetland; Open wetland, not coastal nor rivershore (non-forested, wetland)]
- Range:** New Brunswick and Quebec to Manitoba, New York, Pennsylvania, Michigan and Minnesota.
- Phenology:** Flowers May - June.
- Family:** Caprifoliaceae



Illustration from Britton & Brown's Illustrated Flora of the Northern United States and Canada, 2nd ed.

**Aids to Identification:** Swamp fly-honeysuckle is a shrub that grows up to 1.5 m high with upward pointing branches covered with small hairs, and opposite oval leaves 2-5 cm in length. The flowers, borne in pairs, are yellow, two-lipped, and narrow. The fleshy red berries also occur in pairs. The only other honeysuckle that is found in similar communities is *Lonicera villosa*, the mountain fly honeysuckle. It is distinguished by its blue berries and winter buds covered by 2 valvate scales (vs. several imbricate scales).

**Ecological characteristics:** Because of the specific habitat requirements of swamp fly-honeysuckle -- open areas of cool cedar swamps underlain by limestone -- it is not widespread, but populations may be plentiful where it does occur.

**Synonyms:**

**Rarity of *Lonicera oblongifolia***

<b>State Rank:</b>	S3	Rare in Maine.
<b>New England Rank:</b>	None	
<b>Global Rank:</b>	G4	Widespread, abundant, and apparently secure globally, but with cause for long-term concern.

**Status of *Lonicera oblongifolia***

<b>Federal Status:</b>	None	No Federal Status.
<b>State Status:</b>	Special Concern	Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.



▲ Historical (before 1983)  
● Recent (1983 - present)

### Known Distribution in Maine:

This rare plant has been documented from a total of 25 town(s) in the following county(ies): Aroostook, Penobscot, Piscataquis, Somerset, Washington.

**Dates of documented observations are:** 1883 (2), 1937, 1938 (2), 1941, 1945, 1983, 1984, 1985, 1986, 1987, 1988, 1989 (2), 1993 (4), 1994, 1997, 2001 (2), 2002 (5), 2003 (2)

### Reason(s) for rarity:

Specific habitat requirements.

### Conservation considerations:

Appears reasonably secure; known populations are persistent.

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The information in this fact sheet was downloaded from the Natural Areas Program's Biological and Conservation Database on 13 MAY 2004. We are grateful to our Botanical Advisory Group for additional information on particular species, and in particular, to Arthur Haines for his assistance with identifying characteristics and taxonomic questions. Nomenclature follows Haines and Vining's *Flora of Maine* (V.F. Thomas Press, 1998); where older works refer to a plant by another name, it is given under "Synonyms". The Natural Areas Program, within the Department of Conservation, maintains the most comprehensive source of information on Maine's rare or endangered plants and rare or exemplary natural communities, and is a member of the Association for Biodiversity Information.

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Maine Department of Conservation  
Natural Areas Program

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*Ranunculus gmelinii* DC.  
Small Yellow Water Crowfoot

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**Habitat:** Springy rills, clear cold ponds, shores and meadows. [Open water (non-forested, wetland)]

**Range:** Eastern Quebec and Nova Scotia to Alaska, south to Maine, Michigan and Minnesota. Also in Asia.

**Phenology:** Flowers in July and August.

**Family:** Ranunculaceae



Illustration from Britton & Brown's Illustrated Flora of the Northern United States and Canada, 2nd ed.

**Aids to Identification:** This species differs from the common buttercup in being semi-aquatic, the elongate stems creeping or floating in shallow water or sprawling on muddy shores or in meadows. The underwater leaves have long stalks, are flaccid in texture and are semi-transparent. The above-water leaves are thicker with 3 to 5 lobes. The golden-yellow, 5-petaled flowers occur in clusters of one to four, and mature into a cluster of achenes (dry fruits containing seeds) in a rounded head. These achenes have a persistent style that protrudes like a beak. It somewhat resembles *R. flabellaris*, the yellow water crowfoot, a species that is more common in Maine. *R. gmelinii* is recognized by its smaller size (petals 3-7 mm long, achenes 1-1.6 mm long with a beak 0.4-0.8 mm long) and achenes that are not thickened and spongy in the basal half.

**Ecological characteristics:** Ecological relationships in Maine are not well known.

**Synonyms:** Formerly known as *Ranunculus gmelinii* DC. var. *hookeri* (D. Don) L. Benson and also var. *purshii* (Richards.) Hara.

**Rarity of *Ranunculus gmelinii***

<b>State Rank:</b>	S2	Imperiled in Maine because of rarity or vulnerability to further decline.
<b>New England Rank:</b>	Division 2	Regionally rare plant. Fewer than 20 current (seen since 1970) occurrences in New England.
<b>Global Rank:</b>	G5T5	Species demonstrably widespread, abundant, and secure globally.

**Status of *Ranunculus gmelinii***

<b>Federal Status:</b>	None	No Federal Status.
<b>State Status:</b>	Threatened	Rare and, with further decline, could become endangered; or federally listed as Threatened.



Maine Department of Conservation  
Natural Areas Program

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*Valeriana uliginosa* (Torr. & Gray) Rydb.

**Marsh Valerian**

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- Habitat:** Circumneutral fens, in open areas.  
[Forested wetland; Open wetland, not coastal nor rivershore (non-forested, wetland)]
- Range:** Quebec to Ontario, Maine, Vermont, New York, Ohio, Indiana, Michigan, and Wisconsin.
- Phenology:** Perennial, flowers May - June.
- Family:** Caprifoliaceae

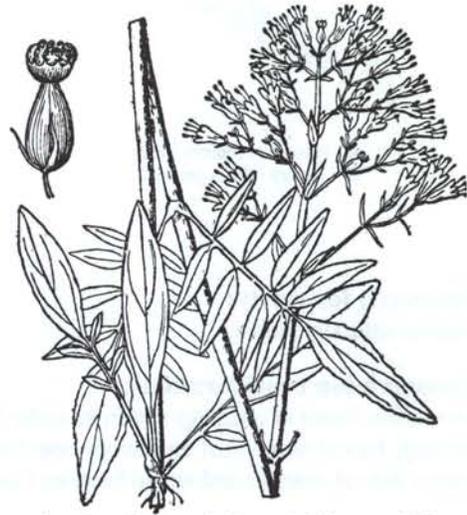


Illustration from Britton & Brown's Illustrated Flora of the Northern United States and Canada, 2nd ed.

**Aids to Identification:** Valerians are perennial herbs with opposite, pinnately compound leaves. The flowers are small and white. During flowering, the sepals appear as 5-20 narrow bristles; in fruit these elongate and form a plume that aids in wind dispersal of the fruits, similar to dandelion. *V. uliginosa* is a native species of circumneutral fens with simple basal leaves and glabrous leaflets. The introduced *V. officinalis* occurs in fields and disturbed areas. This similar looking species has pinnately-divided leaves and pubescent leaflets (on the undersurface).

**Ecological characteristics:** Found in cool, limy swamps associated with larch (*Larix laricina*) and white cedar (*Thuja occidentalis*). May decline as trees encroach on the openings in which it grows.

**Synonyms:** Former names include *Valeriana sitchensis* Bong. ssp. *uliginosa* (Torr. & Gray) Boivin.

**Rarity of *Valeriana uliginosa***

<b>State Rank:</b>	S2	Imperiled in Maine because of rarity or vulnerability to further decline.
<b>New England Rank:</b>	Division 2	Regionally rare plant: Fewer than 20 current (seen since 1970) occurrences within New England.
<b>Global Rank:</b>	G4Q	Widespread, abundant, and apparently secure globally, but with cause for long-term concern (questionable taxonomy).

**Status of *Valeriana uliginosa***

<b>Federal Status:</b>	None	No Federal Status.
<b>State Status:</b>	Special Concern	Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.



▲ Historical (before 1982)  
● Recent (1982- present)

### Known Distribution in Maine:

This rare plant has been documented from a total of 22 town(s) in the following county(ies): Aroostook.

**Dates of documented observations are:** 1896 (2), 1898, 1900, 1909, 1916, 1956, 1983, 1985 (2), 1986, 1987 (2), 1989, 1992, 1998 (2), 1999, 2001 (2), 2002 (4)

### Reason(s) for rarity:

Habitat naturally scarce.

### Conservation considerations:

Most often found in openings within its cedar bog habitat, suggesting that decreased light with canopy closure may be limiting. Partial removal of the canopy could be beneficial to the species; complete canopy removal could cause more drastic habitat changes and would be more likely to be detrimental.

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The information in this fact sheet was downloaded from the Natural Areas Program's Biological and Conservation Database on 17 MAY 2004. We are grateful to our Botanical Advisory Group for additional information on particular species, and in particular, to Arthur Haines for his assistance with identifying characteristics and taxonomic questions. Nomenclature follows Haines and Vining's *Flora of Maine* (V.F. Thomas Press, 1998); where older works refer to a plant by another name, it is given under "Synonyms". The Natural Areas Program, within the Department of Conservation, maintains the most comprehensive source of information on Maine's rare or endangered plants and rare or exemplary natural communities, and is a member of the Association for Biodiversity Information.

If you know of locations for this plant or would like more information on this species,  
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State House Station 93, Augusta, Maine 04333; telephone (207) 287-8044.



# Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the Proposed Potential Transmission Line Corridors, , Project #195600518, Chester to Oakfield, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Maple - basswood - ash forest	GNR	S3		38	2004-06-24	Hardwood to mixed forest (forest, upland)
Beech - birch - maple forest	G3G5	S4		49	2004-06-09	Hardwood to mixed forest (forest, upland)
Carex oronensis	G3	S3	T	59	1996-07-10	Old field/roadside (non-forested, wetland or upland)
Valeriana uliginosa	G4Q	S2	SC	28	1988-06-28	Open wetland, not coastal nor rivershore (non-forested, wetland)
Cypripedium reginae	G4	S3	T	70	1988-06-28	Forested wetland
Carex gynocrates	G5	S2	SC	16	1988-06-28	Forested wetland
Northern white cedar woodland fen	GNR	S4		12	2006-09-12	Forested wetland
Sheep laurel dwarf shrub bog	G5	S4		43	2006-07-13	Open wetland, not coastal nor rivershore (non-forested, wetland)
Silver maple floodplain forest	GNR	S3		30	2006-07-18	Forested wetland
Hemlock forest	G4G5	S4		26	2006-06-21	Conifer forest (forest, upland)
Cypripedium reginae	G4	S3	T	71	2006-08-23	Open wetland, not coastal nor rivershore (non-forested, wetland)
Cypripedium reginae	G4	S3	T	72	2006-08-24	Forested wetland
Leatherleaf boggy fen	G5	S4		18	2006-09-07	Open wetland, not coastal nor rivershore (non-forested, wetland)
Unpatterned fen ecosystem	GNR	S4		59	2007-08-15	Forested wetland
Northern white cedar swamp	GNR	S4		20	2007-09-19	Forested wetland
Hypericum ascyron	G4	S1	E	2	2007-07-26	Forested wetland
Northern white cedar woodland fen	GNR	S4		15	2007-06-14	Forested wetland

## Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the Proposed Potential Transmission Line Corridors, , Project #195600518, Chester to Oakfield, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Unpatterned fen ecosystem	GNR	S4		64	2007-07-25	Open wetland, not coastal nor rivershore (non-forested, wetland)
Unpatterned fen ecosystem	GNR	S4		65	2007-09-26	Forested wetland
Northern white cedar swamp	GNR	S4		22	2007-09-26	Forested wetland
Leatherleaf boggy fen	G5	S4		20	2007-09-26	Open wetland, not coastal nor rivershore (non-forested, wetland)
Silver maple floodplain forest	GNR	S3		32	2007-09-18	Forested wetland
Cypripedium reginae	G4	S3	T	75	2008-07-02	Open wetland, not coastal nor rivershore (non-forested, wetland)
Valeriana uliginosa	G4Q	S2	SC	29	2008-07-02	Open wetland, not coastal nor rivershore (non-forested, wetland)
Lonicera oblongifolia	G4	S3	SC	44	2008-07-02	Forested wetland
Carex gynocrates	G5	S2	SC	19	2008-07-02	Forested wetland
Dryopteris goldiana	G4	S2	SC	27	2008-09-02	Hardwood to mixed forest (forest, upland)
Carex oronensis	G3	S3	T	53	2007-06-22	Old field/roadside (non-forested, wetland or upland)

## Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the Proposed Potential Transmission Line Corridors, , Project #195600518, Chester to Oakfield, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Red oak - northern hardwoods - white pine forest	GNR	S4		12	1986-11-08	Hardwood to mixed forest (forest, upland)
Red oak - northern hardwoods - white pine forest	GNR	S4		13	2003-06-04	Hardwood to mixed forest (forest, upland)
Mixed graminoid - shrub marsh	GNR	S5		8	1985-07-17	Open wetland, not coastal nor rivershore (non-forested, wetland)
Ranunculus gmelinii var. purshii	G5T5	S2	T	2	2003-09-02	Open water (non-forested, wetland)
Carex oronensis	G3	S3	T	18	2006-06-22	Old field/roadside (non-forested, wetland or upland)
Carex oronensis	G3	S3	T	21	1987-07-13	Old field/roadside (non-forested, wetland or upland)
Carex oronensis	G3	S3	T	22	1987-07-13	Old field/roadside (non-forested, wetland or upland)
Carex oronensis	G3	S3	T	23	2006-06-22	Old field/roadside (non-forested, wetland or upland)
Carex oronensis	G3	S3	T	24	1998-07-10	Old field/roadside (non-forested, wetland or upland)
Carex oronensis	G3	S3	T	32	2006-06-20	Old field/roadside (non-forested, wetland or upland)
Carex oronensis	G3	S3	T	55	1993-07-24	Old field/roadside (non-forested, wetland or upland)
Panax quinquefolius	G3G4	S3	E	31	1999-07-15	Hardwood to mixed forest (forest, upland)
Ranunculus gmelinii var. purshii	G5T5	S2	T	9	1991	Open water (non-forested, wetland)
Juncus subtilis	G4	S1	T	2	1901-09-25	Open wetland, not coastal nor rivershore (non-forested, wetland)
Platanthera flava var. herbiola	G4T4Q	S2	SC	7	1916-07-11	Non-tidal rivershore (non-forested, seasonally wet)
Trichophorum clintonii	G4	S3	SC	6	1916-07-10	Non-tidal rivershore (non-forested, seasonally wet)

## Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the Proposed Potential Transmission Line Corridors, , Project #195600518, Chester to Oakfield, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Carex oronensis	G3	S3	T	66	1916-07-10	Old field/roadside (non-forested, wetland or upland)
Carex praticola	G5	SX	PE	1	1898-06-09	Hardwood to mixed forest (forest, upland)
Valeriana uliginosa	G4Q	S2	SC	15	1896-07	Open wetland, not coastal nor rivershore (non-forested, wetland)
Hypericum ascyron	G4	S1	E	1	1951-08-05	Forested wetland
Carex oronensis	G3	S3	T	3	1916-07-10	Old field/roadside (non-forested, wetland or upland)
Viola novae-angliae	G4Q	S2	SC	13	1916-07-10	Non-tidal rivershore (non-forested, seasonally wet)
Sedge - leatherleaf fen lawn	G4G5	S4		3	2006-06-13	Open wetland, not coastal nor rivershore (non-forested, wetland)
Eccentric bog ecosystem	GNR	S3		7	1987-08-14	Forested wetland
Eccentric bog ecosystem	GNR	S3		8	1987-08-13	Open wetland, not coastal nor rivershore (non-forested, wetland)
Eccentric bog ecosystem	GNR	S3		9	2007-06-14	Forested wetland
Eccentric bog ecosystem	GNR	S3		10	1987-08-07	Open wetland, not coastal nor rivershore (non-forested, wetland)
Eccentric bog ecosystem	GNR	S3		12	2007-08-16	Open wetland, not coastal nor rivershore (non-forested, wetland)
Eccentric bog ecosystem	GNR	S3		16	2006-07-11	Forested wetland
Carex adusta	G5	S2	E	19	1997-08-25	Rocky coastal (non-forested, upland)
Valeriana uliginosa	G4Q	S2	SC	13	1909-06-09	Open wetland, not coastal nor rivershore (non-forested, wetland)
Cardamine maxima	G5	S1	SC	2	2003-06-04	
Hemlock forest	G4G5	S4		21	2003-06-05	Conifer forest (forest, upland)

### STATE RARITY RANKS

- S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3 Rare in Maine (20-100 occurrences).
- S4 Apparently secure in Maine.
- S5 Demonstrably secure in Maine.
- SU Under consideration for assigning rarity status; more information needed on threats or distribution.
- S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program.

### GLOBAL RARITY RANKS

- G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
- G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3 Globally rare (20-100 occurrences).
- G4 Apparently secure globally.
- G5 Demonstrably secure globally.
- GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

### STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

- E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
- T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

### NON-LEGAL STATUS

- SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
- PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

## ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size:** Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition:** For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context:** Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A, B, C, or D**, where **A** indicates an excellent example of the community or population and **D** indicates a poor example of the community or population. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

**Note:** **Element Occurrence Ranks** are determined by the Maine Natural Areas Program.

Visit our website for more information on rare, threatened, and endangered species!  
<http://www.maine.gov/doc/nrimc/mnap>



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AUGUSTA, MAINE  
04333

JOHN ELIAS BALDACCI  
GOVERNOR

April 2, 2010

EARLE G. SHETTLEWORTH, JR.  
DIRECTOR

Mr. Brooke E. Barnes  
Stantec Consulting  
30 Park Drive  
Topsham, ME 04086

Project: MHPC# 0464-10 - potential wind energy facility and associated transmission line routes; request for significant resources associated with Oakfield, Island Falls, Dyer Brook and other areas

Towns: Oakfield, Island Falls, Dyer Brook, T4 R3 Wels, ME

Dear Mr. Barnes:

In response to your recent request, I have reviewed the information received March 3, 2010 to initiate consultation on the above referenced project.

Based on the information provided, I have concluded that the project areas possibly contain one or more prehistoric and/or historic archaeological sites based on our predictive model of archaeological site location. Therefore, archaeological survey for both prehistoric and historic archaeology are necessary for the areas identified on the enclosed four maps (known archaeological sites and areas which may be sensitive for archaeological sites) prior to any ground disturbance. Lists of qualified historic and prehistoric archaeologists are enclosed along with material explaining the Phase I/II/III approach to archaeological survey. This information can also be found on our website: [www.maine.gov/mhpc/project\\_review](http://www.maine.gov/mhpc/project_review) This office must approve any proposal for archaeological fieldwork.

Regarding above ground historic architectural resources, please forward maps which clearly indicate the Areas of Potential Effect (APE) for this project in order for us to respond properly to your request. As you know, we usually require some architectural survey for most wind projects and associated transmission lines in order to identify resources which are potentially eligible for listing in the National Register of Historic Places. Survey will need to be completed in accordance with our Section 106 specific architectural survey guidelines and associated forms.

It would be helpful for us to know early on what federal and state agencies will be involved with funding, permitting or licensing for this proposed project.

Once this information is received, we will forward a response regarding the results of our evaluation. Please contact Dr. Arthur Spiess of my staff concerning prehistoric archaeology, Lee Cranmer of my staff regarding historic archaeology or Robin Stancampiano of my staff regarding architecture if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney  
Deputy State Historic Preservation Officer



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JOHN ELIAS BALDACCI  
GOVERNOR

MAINE HISTORIC PRESERVATION COMMISSION  
55 CAPITOL STREET  
65 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333

**Prehistoric Archaeologists Approved List:  
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05/18/09



MAINE HISTORIC PRESERVATION COMMISSION  
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JOHN ELIAS BALDACCI  
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♦Underwater and Maritime





ANGUS S. KING, JR.  
GOVERNOR

EARLE G. SHETTLEWORTH, JR.  
DIRECTOR

## CONTRACT ARCHAEOLOGY GUIDELINES

June 10, 2002

This document is provided as background information to agencies, corporations, professional consultants or individuals needing contract archaeological services (also known as Cultural Resources Management archaeology) in Maine. These guidelines are based on state rules (94-089 Chapter 812).

### Project Types

The vast majority of contract archaeology survey work falls into one of three categories. **Phase I** surveys are designed to determine whether or not archaeological sites exist on a particular piece of land. Such work involves checking records of previous archaeology in the area, walking over the landscape to inspect land forms and look for surface exposures of soil and possible archaeological material, and the excavation of shovel test pits in areas of high probability.

**Phase II** surveys are designed to focus on one or more sites that are already known to exist, find site limits by digging test pits, and determine site content and preservation. Information from Phase II survey work is used by the Maine Historic Preservation Commission (MHPC) to determine site significance (eligibility for listing in the National Register of Historic Places). **Phase III** archaeological work, often called data recovery, is careful excavation of a significant archaeological site to recover the artifacts and information it contains in advance of construction or other disturbance.

Archaeological sites are further divided into two broad categories of culture, **prehistoric** (or Native American), and **historic** (or European-American). Different archaeological specialists are usually needed for prehistoric or historic sites because the nature of content and preservation and site locations are quite different.

### Scope of Work

In responding to a project submission, the MHPC may issue a letter specifying which type of archaeological survey is needed (prehistoric, historic or both) and at what level (Phase I, II, or III). Often the response letter contains further information, such as the suspected presence of an historic site of a certain age, or a statement that only a portion of the project parcel in question is sensitive for prehistoric sites and only that portion needs archaeological survey.

Once the project applicant has one or more scopes of work (proposals) from appropriate archaeologists (see below), the applicant should submit their preferred proposal (*without attached financial information or bid total*) to the MHPC for approval. MHPC will not comment upon cost, but will comment on the appropriateness of the scale and scope of the work. An approval from MHPC of the scope of work is the applicant's guarantee that, if the field and laboratory work are done according to the scope, and appropriately described in writing, the results will be accepted by MHPC.

The final written report on the project must also be submitted to MHPC for review and comment.



### **Finding an Archaeologist**

At the time that MHPC issues a letter requiring archaeological survey work, MHPC will also supply one (or more) lists of archaeologists (Levels 1 and/or 2, historic or prehistoric) appropriate to the type of work (Phase I, II, III, historic or prehistoric). Archaeologists on the Level 2 Approved Lists can do projects of any level, including Phase I archaeological survey projects. Level 1 archaeologists are restricted to doing Phase I surveys, and certain planning projects for municipal governments.

MHPC maintains lists of archaeologists interested in working in different geographic areas of Maine, and those who are qualified in different types of work. The archaeologists themselves indicate their availability (except for short-term absence) to MHPC on a periodic basis, so archaeologists on the list can be expected to respond to inquiries. The applicant should solicit proposals or bids for work from archaeologists whose names appear on the list supplied by MHPC.

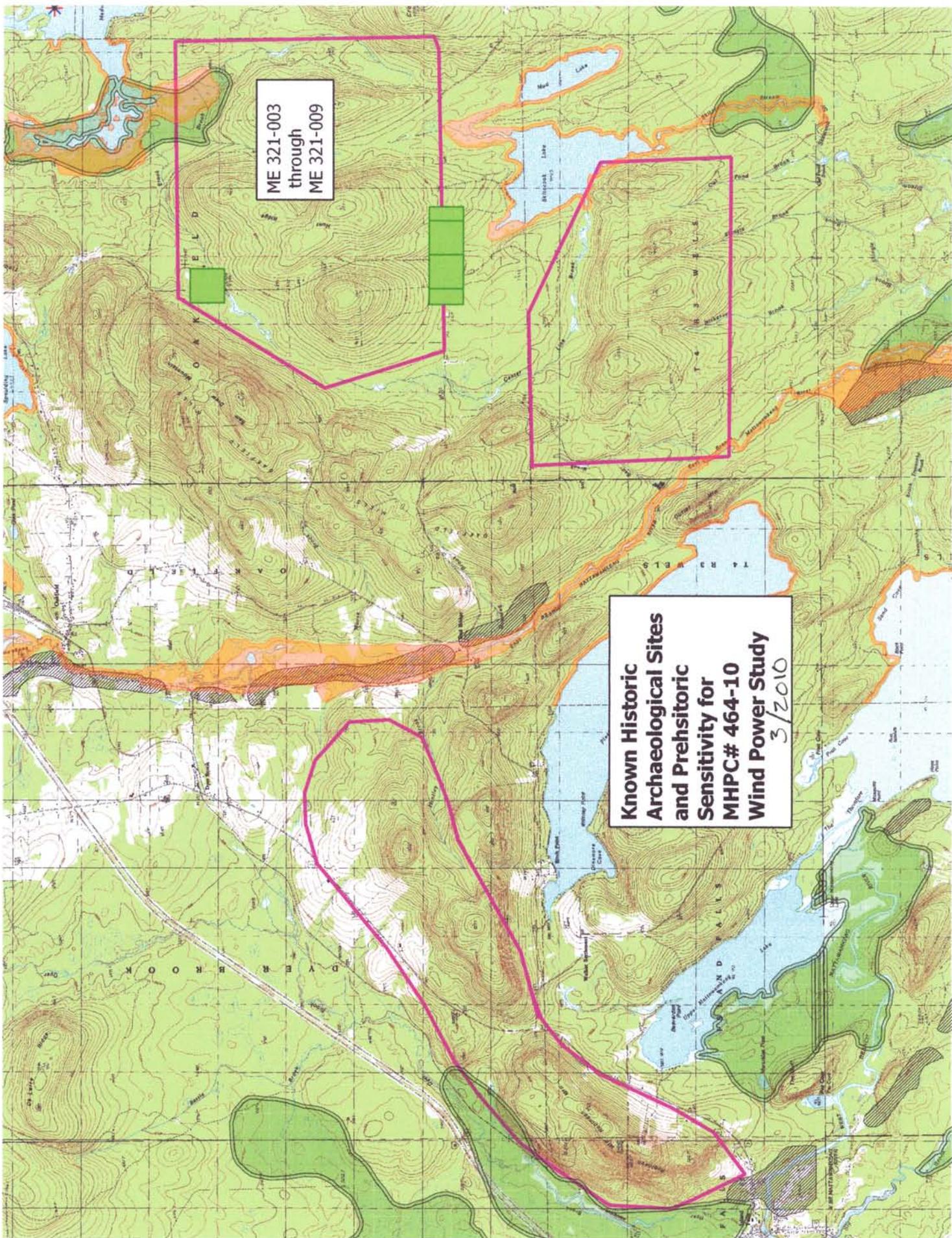
These archaeologists' names are taken from lists of archaeologists approved for work in Maine by MHPC under a set of rules establishing minimal qualifications, such as previous supervisory experience in northern New England, and an appropriate graduate degree. *However, the inclusion of an archaeologist on one of these lists should not be interpreted as an endorsement by the MHPC beyond these limited qualification criteria. Moreover, the MHPC cannot recommend the services of an individual archaeologist.*

### **Project Final Report**

Whatever the archaeological survey result, a final report on the project should be submitted by the applicant to the MHPC. The MHPC will review the report, and issue further guidance or issue a "clearance" letter for the project.

ME 321-003  
through  
ME 321-009

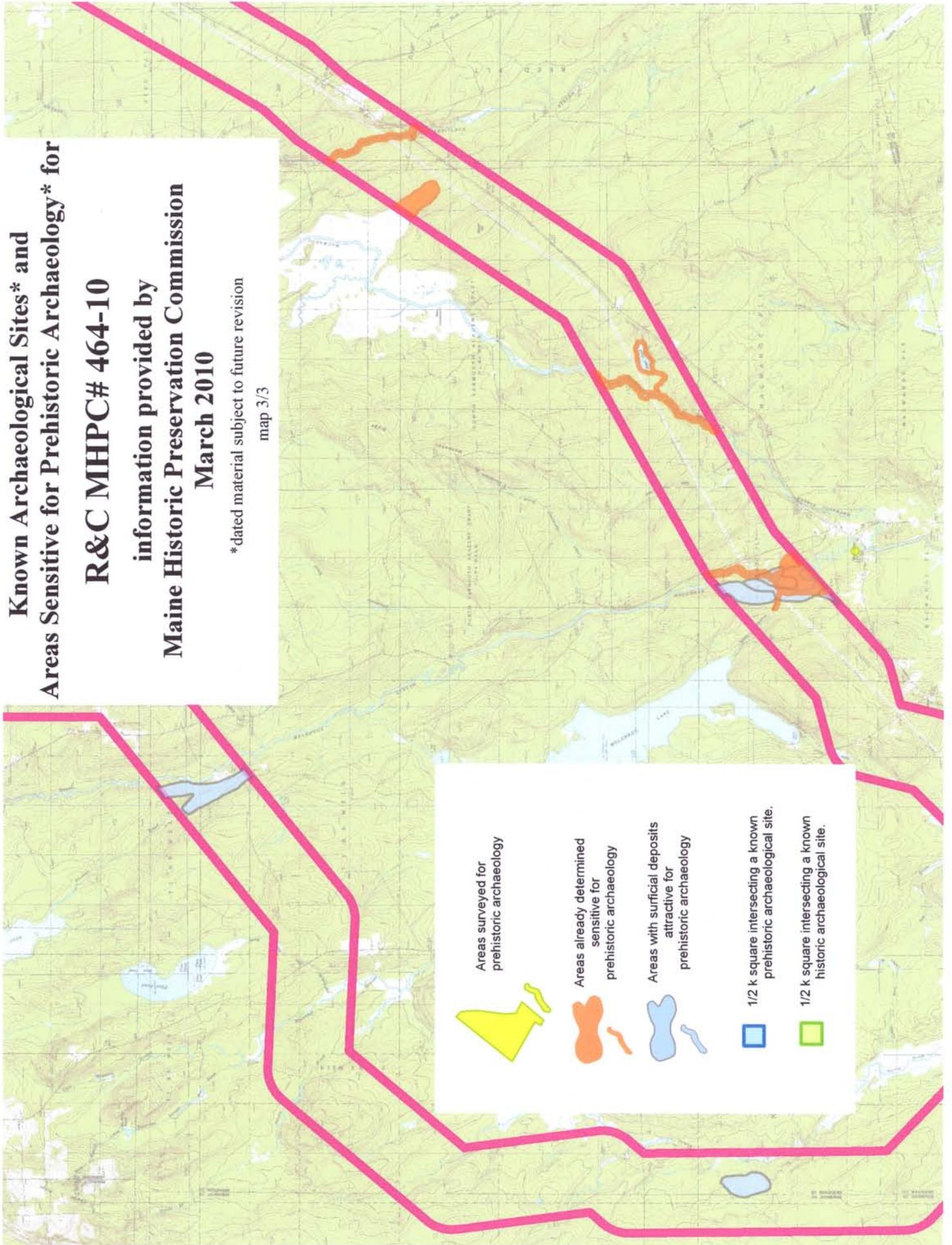
**Known Historic Sites  
Archaeological Sites  
and Prehistoric  
Sensitivity for  
MHPC# 464-10  
Wind Power Study**  
3/2010



**Known Archaeological Sites\* and  
Areas Sensitive for Prehistoric Archaeology\* for  
R&C MHPC# 464-10**

**information provided by  
Maine Historic Preservation Commission  
March 2010**

\*dated material subject to future revision  
map 3/3



Areas surveyed for  
prehistoric archaeology



Areas already determined  
sensitive for  
prehistoric archaeology



Areas with surficial deposits  
attractive for  
prehistoric archaeology



1/2 k square intersecting a known  
prehistoric archaeological site.



1/2 k square intersecting a known  
historic archaeological site.



**Known Archaeological Sites\* and  
Areas Sensitive for Prehistoric Archaeology\* for**

**R&C MHP C# 464-10**

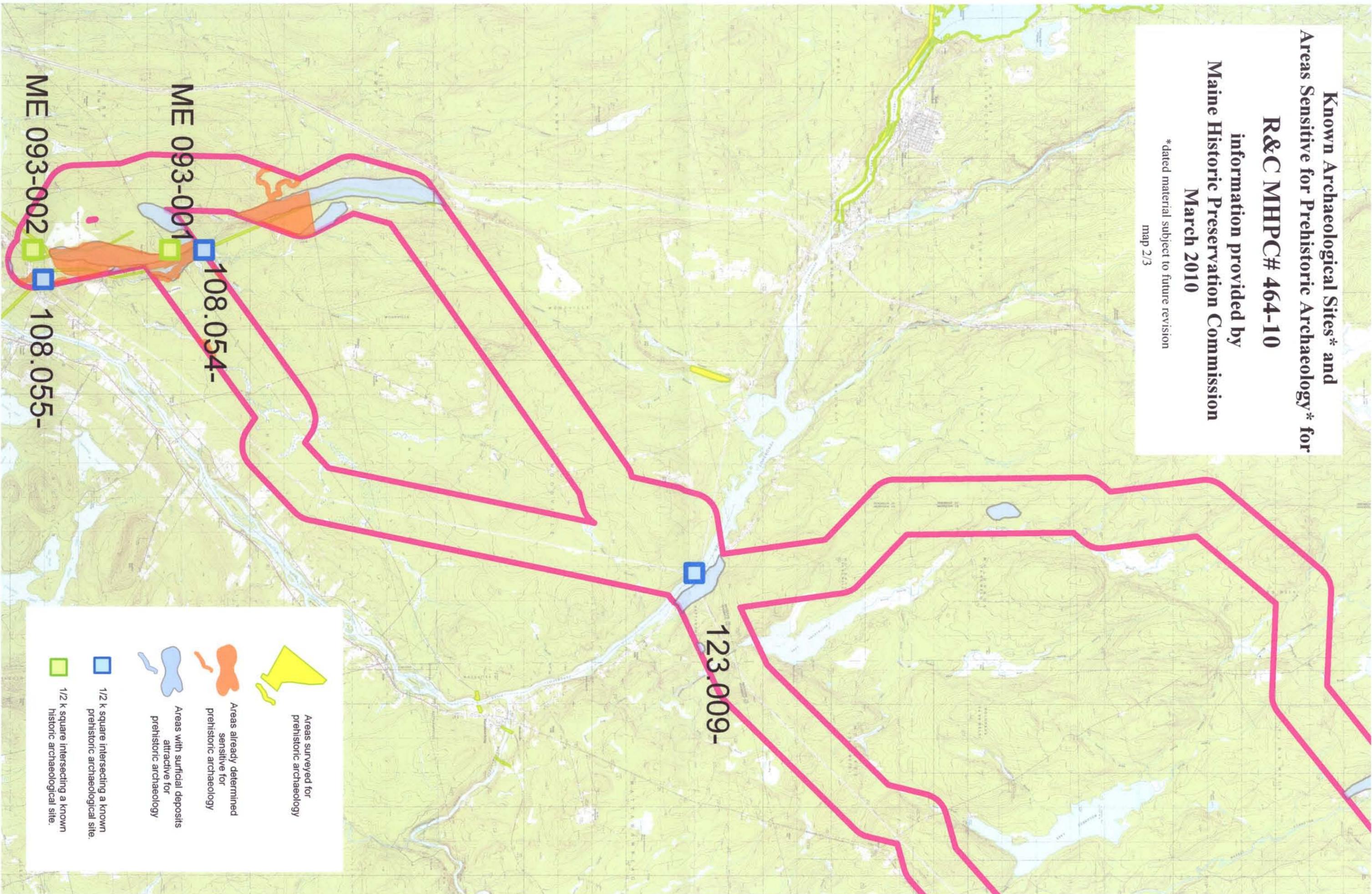
**information provided by**

**Maine Historic Preservation Commission**

**March 2010**

*\*dated material subject to future revision*

map 2/3



**Areas surveyed for  
prehistoric archaeology**

**Areas already determined  
sensitive for  
prehistoric archaeology**

**Areas with surficial deposits  
attractive for  
prehistoric archaeology**

**1/2 k square intersecting a known  
prehistoric archaeological site.**

**1/2 k square intersecting a known  
historic archaeological site.**

**Known Archaeological Sites\* and  
Areas Sensitive for Prehistoric Archaeology\* for**

**R&C MHP C# 464-10**  
**information provided by**  
**Maine Historic Preservation Commission**  
**March 2010**

\*dated material subject to future revision  
map 1/3

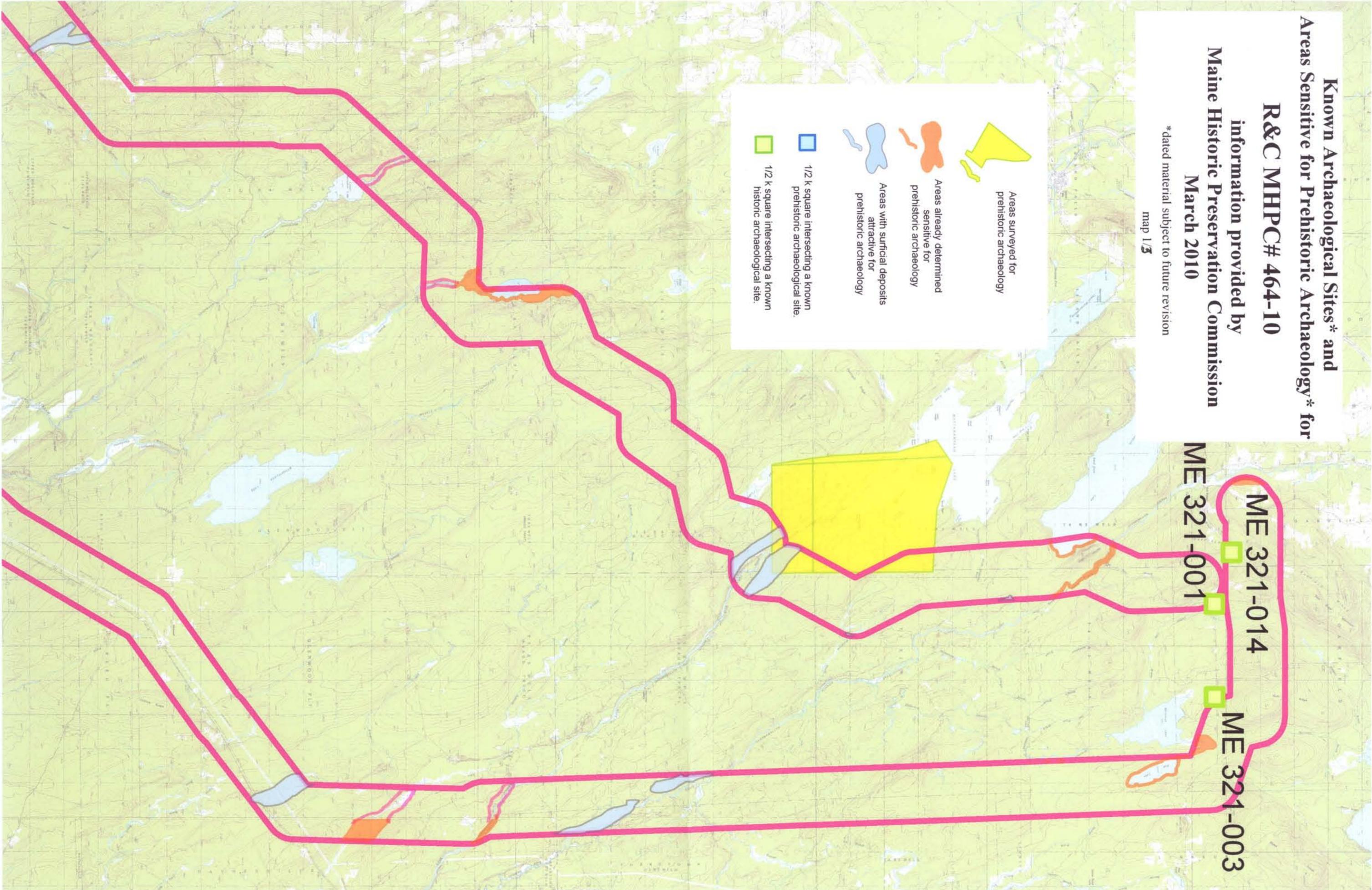
Legend for archaeological sites and sensitive areas:

- Areas surveyed for prehistoric archaeology (Yellow polygon)
- Areas already determined sensitive for prehistoric archaeology (Orange polygon)
- Areas with surficial deposits attractive for prehistoric archaeology (Blue polygon)
- 1/2 k square intersecting a known prehistoric archaeological site. (Blue square)
- 1/2 k square intersecting a known historic archaeological site. (Green square)

**ME 321-014**

**ME 321-003**

**ME 321-001**





STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI  
GOVERNOR

DAVID P. LITTELL  
COMMISSIONER

March 10, 2010

Brooke E. Barnes, Project Manager  
Stantec Consulting  
30 Park Drive  
Topsham, ME 04086

Re: Advisory Opinion- Significant Resources associated with Oakfield, Island Falls, Dyer Brook, and other areas depicted on maps

Dear Brooke,

This letter is in response to a letter submitted by you on March 1, 2010 asking for information on resources for the proposed electrical transmission lines in the Southern Aroostook, Eastern Penobscot area. I have attached a series of maps (32 in all) showing significant resources printed on them associated with the Natural Resources Protection Act Chapters 310 (Wetlands and Water bodies) and Chapter 335 (Significant Wildlife Habitat).

I have included 2 maps for each approximate township provided in your letter. The first map for each approximate township area shows mapped wetlands and streams/rivers. The second map provided shows areas of Inland Wading Bird Habitat. Please note that not all areas of this proposed project lie in the jurisdiction of the DEP. The unorganized portions of the project lie in LURC territory and are subject to LURC regulations. It is also important to note that streams and rivers flowing in organized municipalities may be subject to Shoreland Zoning and may have different setbacks as detailed in the Natural Resource Protection Act. Please contact town officials in the towns affected by the project for such information regarding shoreland zoned bodies of water. Maps 1-4 Show the 3 Towns, Maps 5-18 Show the route of the Potential Transmission line and Maps 19-32 show the route of Line Corridors.

It is also important to note that all information provided is for informational purposes only and that any project submitted to the DEP for review, must include wetland surveys from qualified professionals including vernal pool information. Please contact the US Army Corps of Engineers regarding federal rules on wetlands and navigable waters as well as any other local and state regulatory agencies regarding natural resources.

Important information regarding these resources associated with wildlife habitat may also be obtained from the Inland Fisheries and Wildlife Department, Please contact Biologist Rich Hoppe in the Ashland, Maine office @ (207) 435-3231.

I hope this serves your immediate need for information regarding this matter. Please contact me if I can be of further assistance (207) 764-0477.

Sincerely,

Eric Hitchcock, Maine DEP  
Bureau of Land and Water Quality  
Div. of Land Resource Regulation

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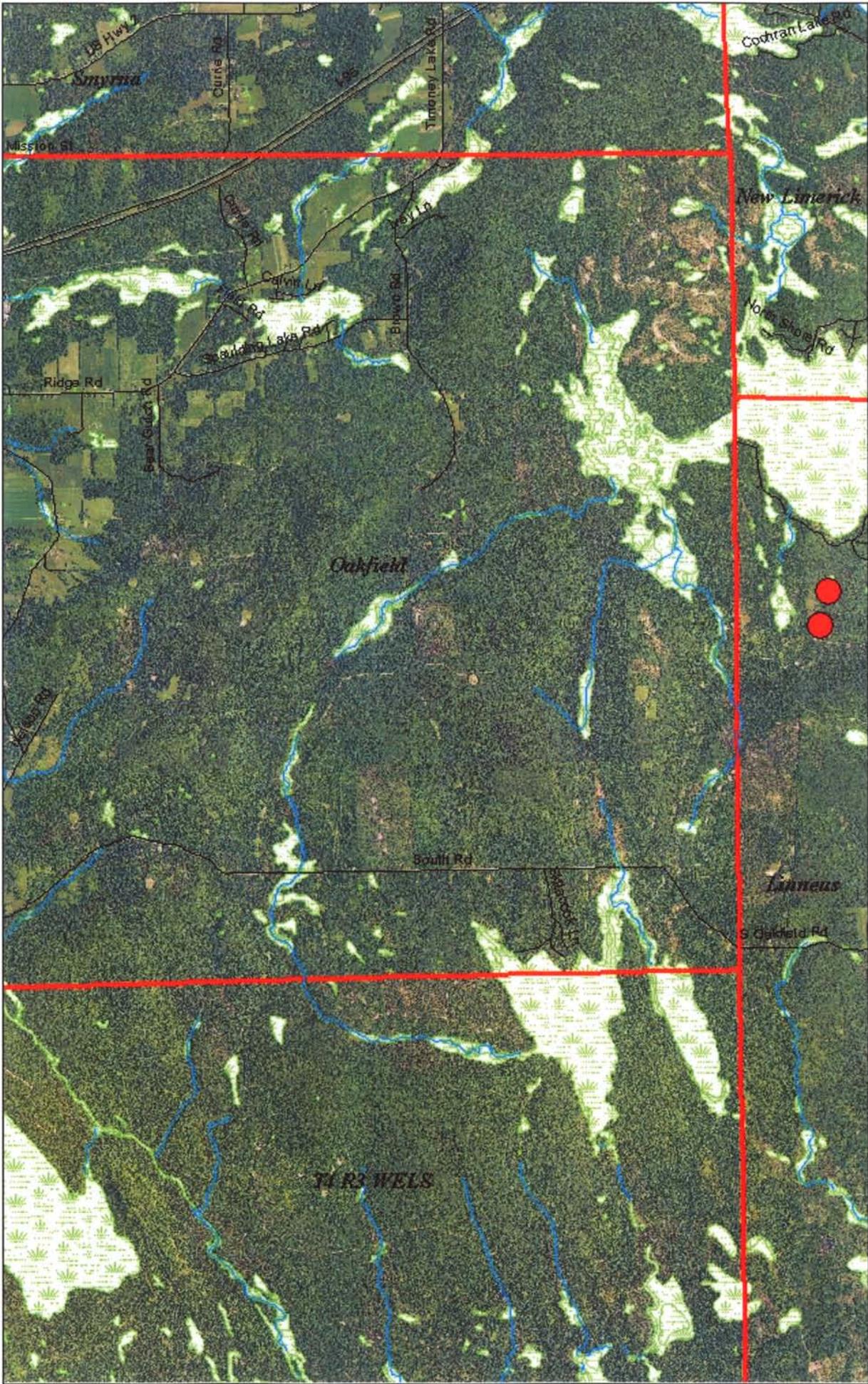


**MAP 1**

**Oakfield, ME  
Inland Wading  
Bird Habitat**

1:58,916  
1 inch = 4,909.7 feet





**MAP 2**  
**Oakfield, ME**  
**Streams and**  
**Wetlands**

1:58,916  
1 inch = 4,909.7 feet





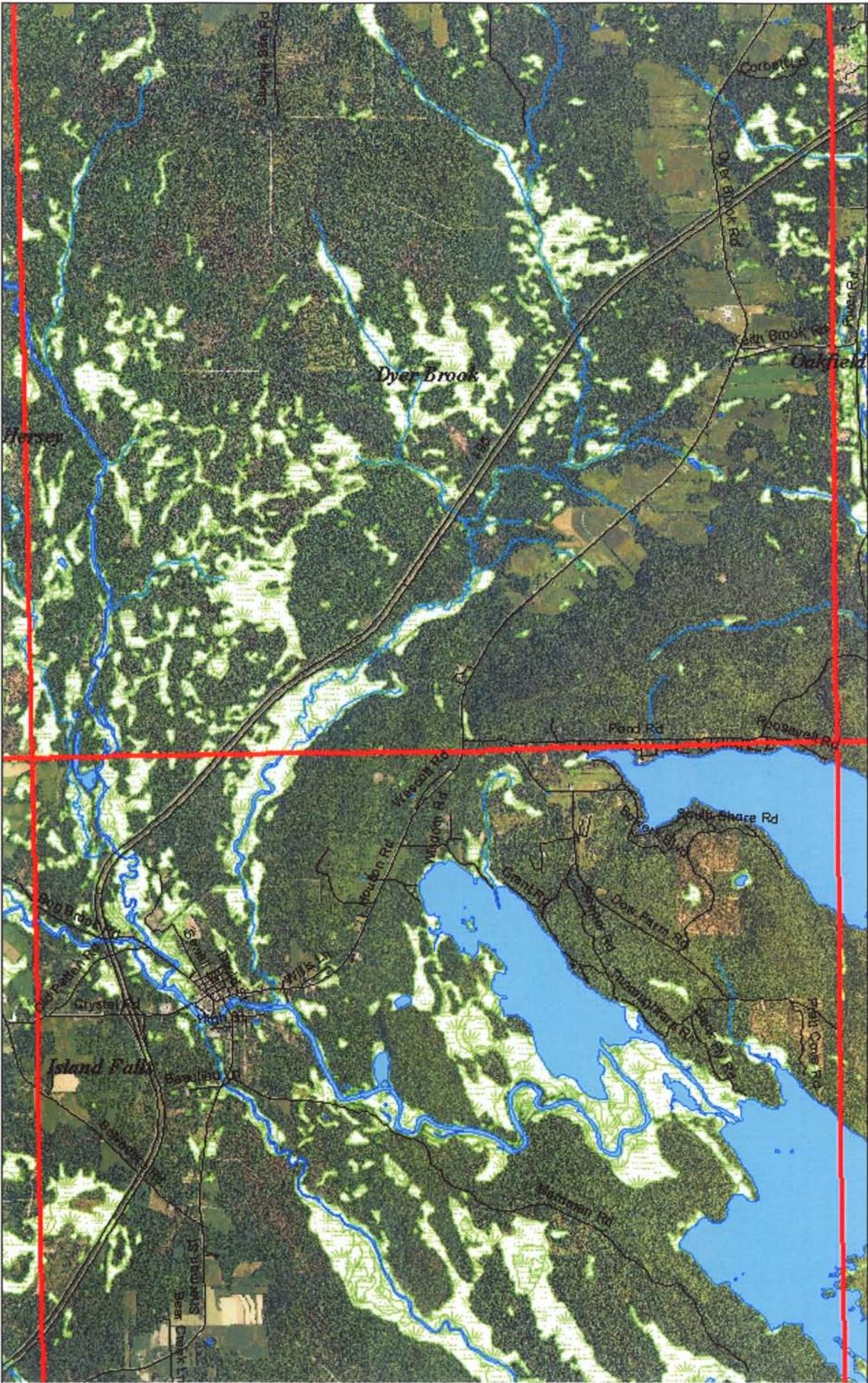
**Map 3**

**Dyer Brook, ME  
Island Falls, ME**

**Inland Wading  
Bird Habitat**

1:65,716  
1 inch = 5,476.31 feet



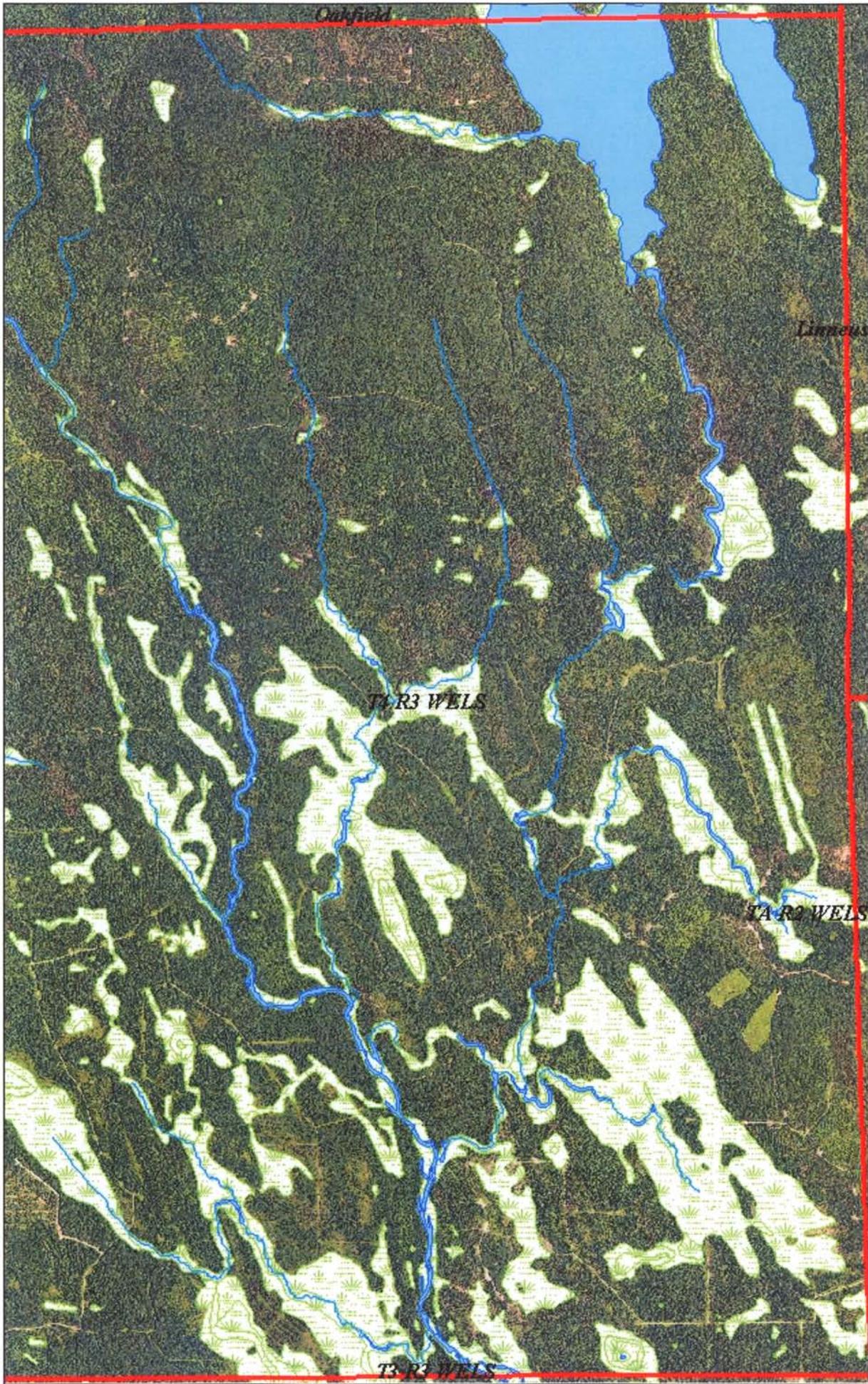


**Map 4**  
**Dyer Brook, ME**  
**Island Falls, ME**  
**Streams and Wetlands**

1:65,716  
1 inch = 5,476.31 feet



Outfield



Map 5

T4 R3, ME

Streams and  
Wetlands

1:40,000  
1 inch = 3,333.33 feet



T4 R3 WELS

T4 R2 WELS

T3 R3 WELS

*Oakfield*

Map 6

T4 R3, ME

Inland Wading  
Bird Habitat

*Linneus*

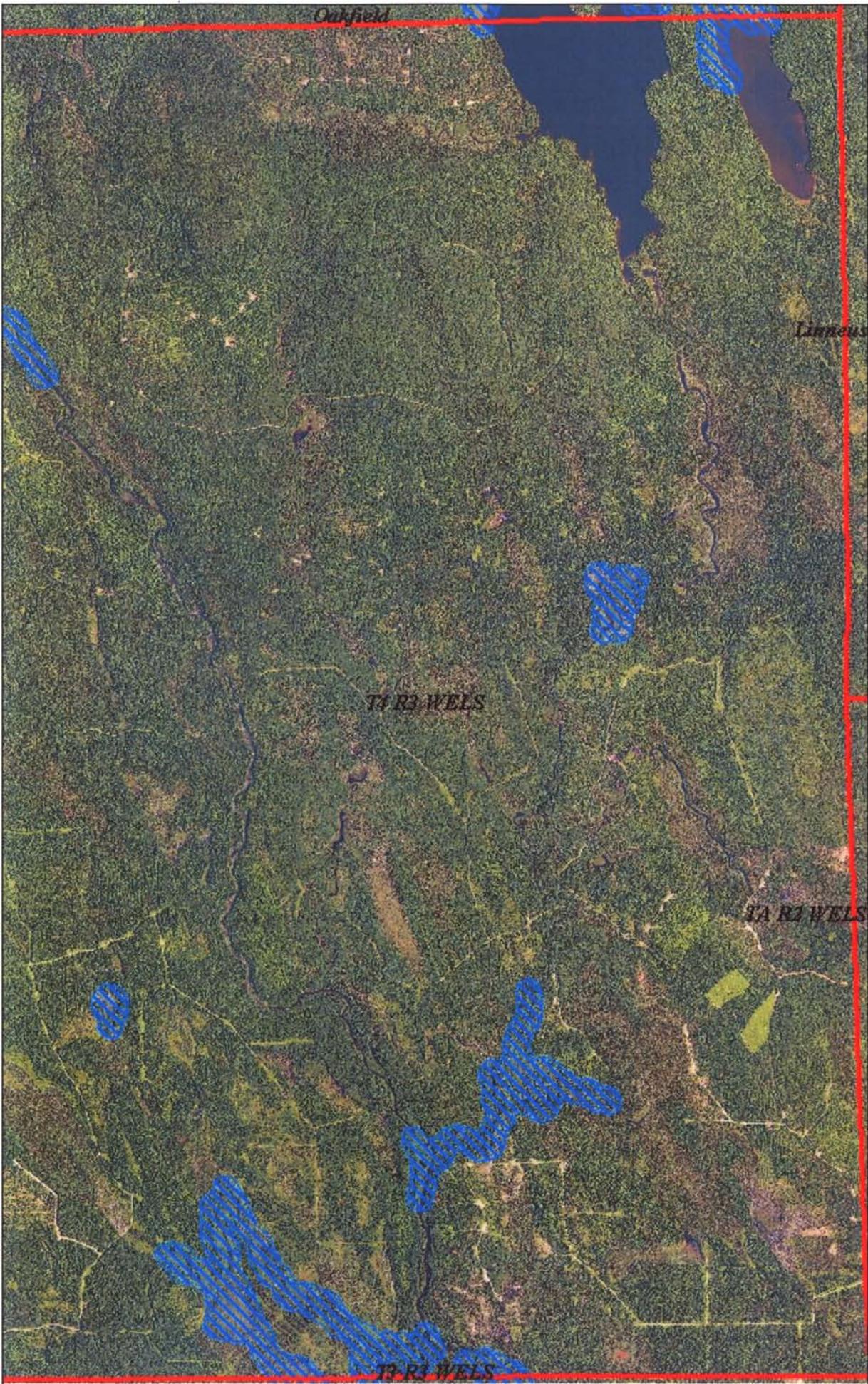
1:40,000  
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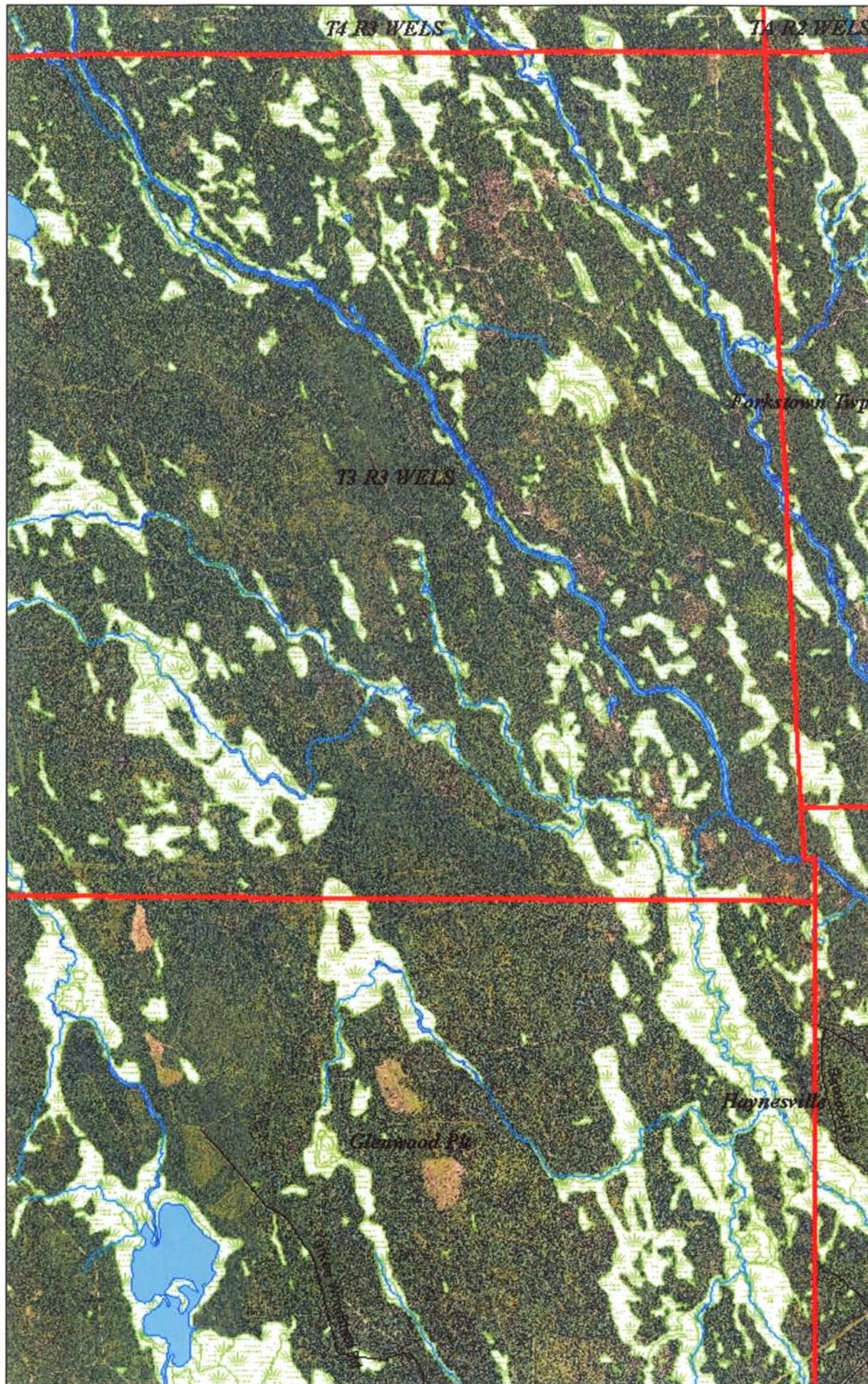


*T4 R3 WELS*

*T4 R1 WELS*

*T3 R1 WELS*





Map 7

T3 R3, ME

Streams and  
Wetlands

1:60,000  
1 inch = 5,000 feet



T4 R3 WELS

T4 R2 WELS

Map 8

T3 R3, ME

Inland Wading  
Bird Habitat

Forkstown Twp

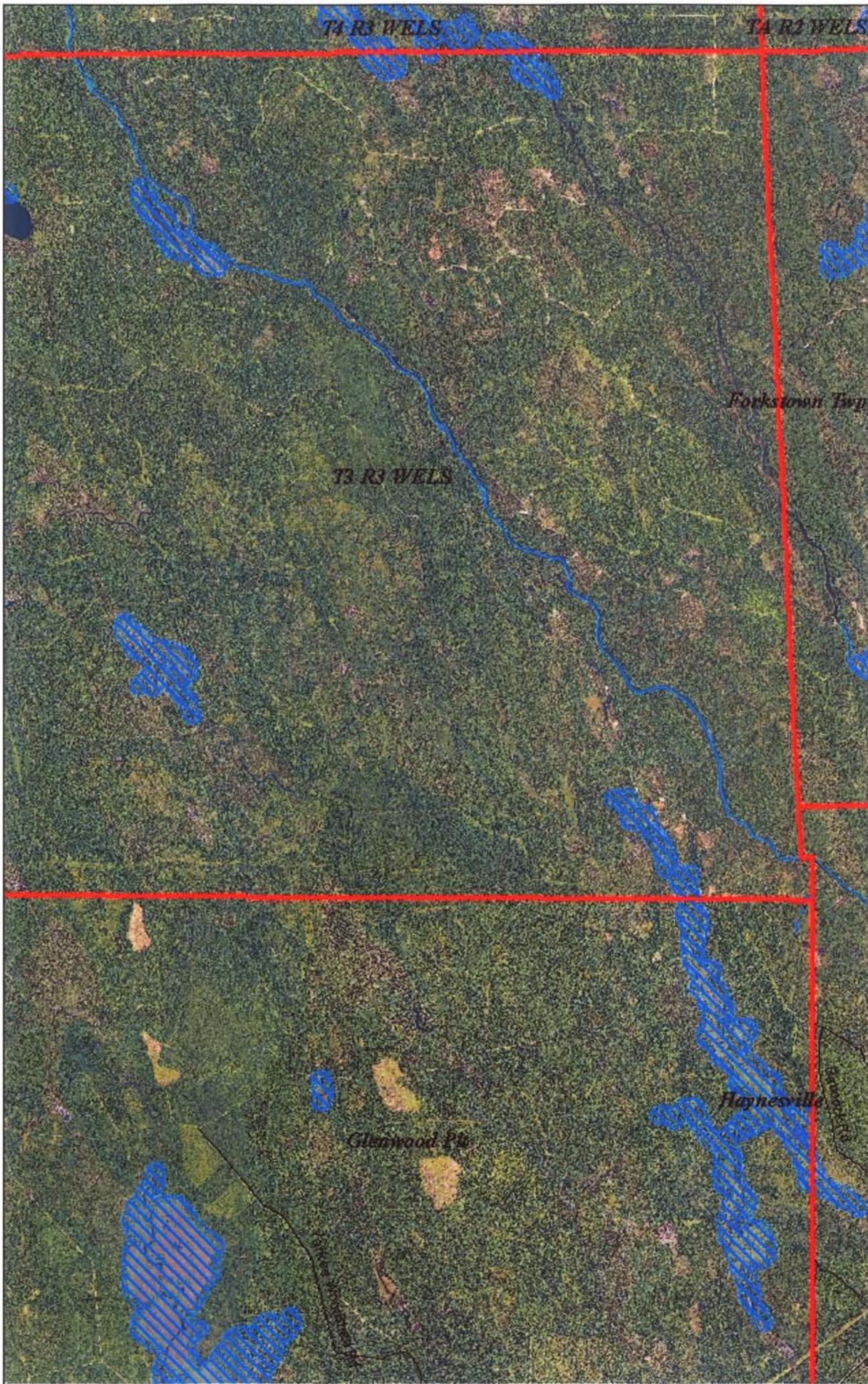
1:60,000  
1 inch = 5,000 feet

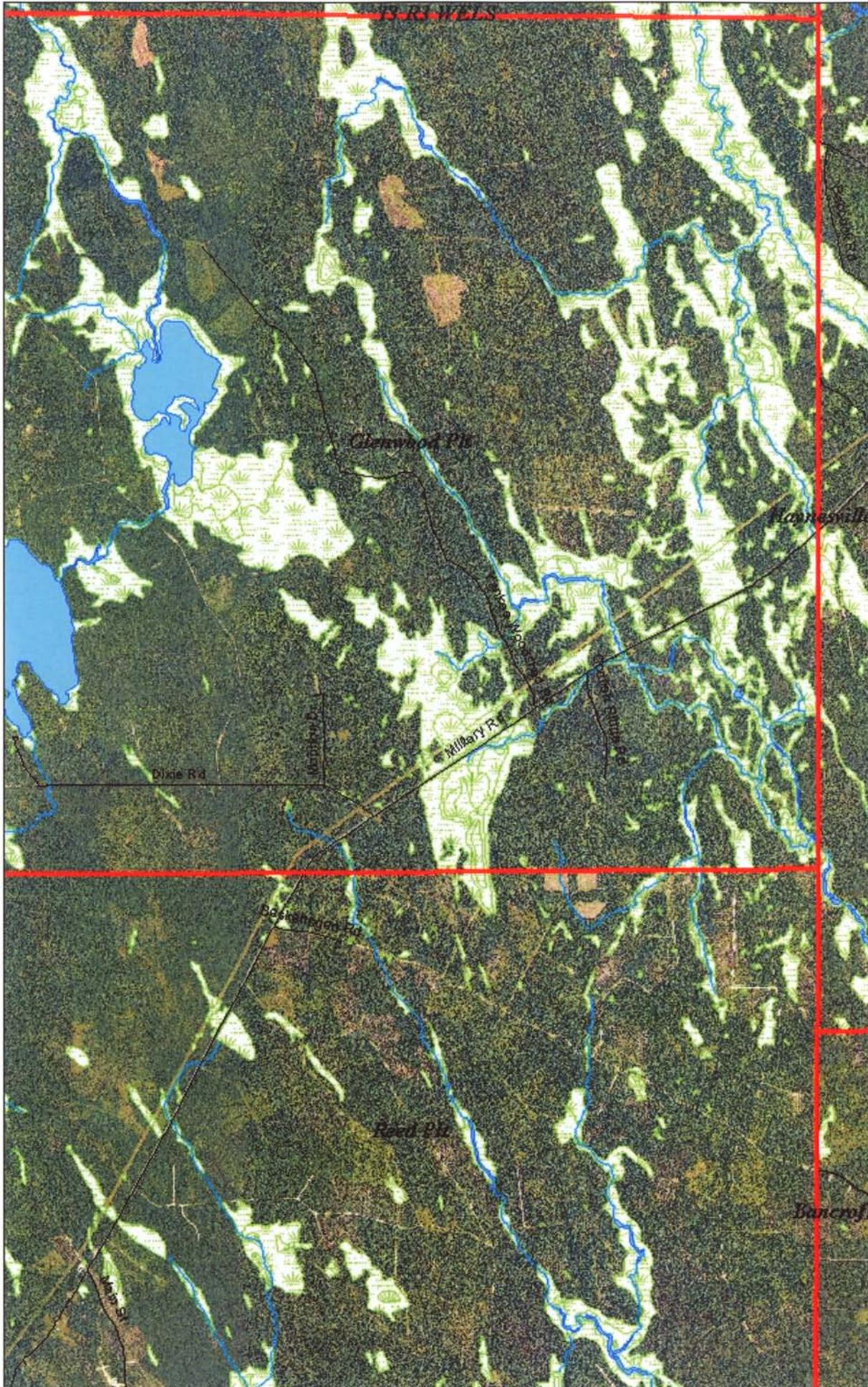
T3 R3 WELS



Haynesville

Glenwood Pt

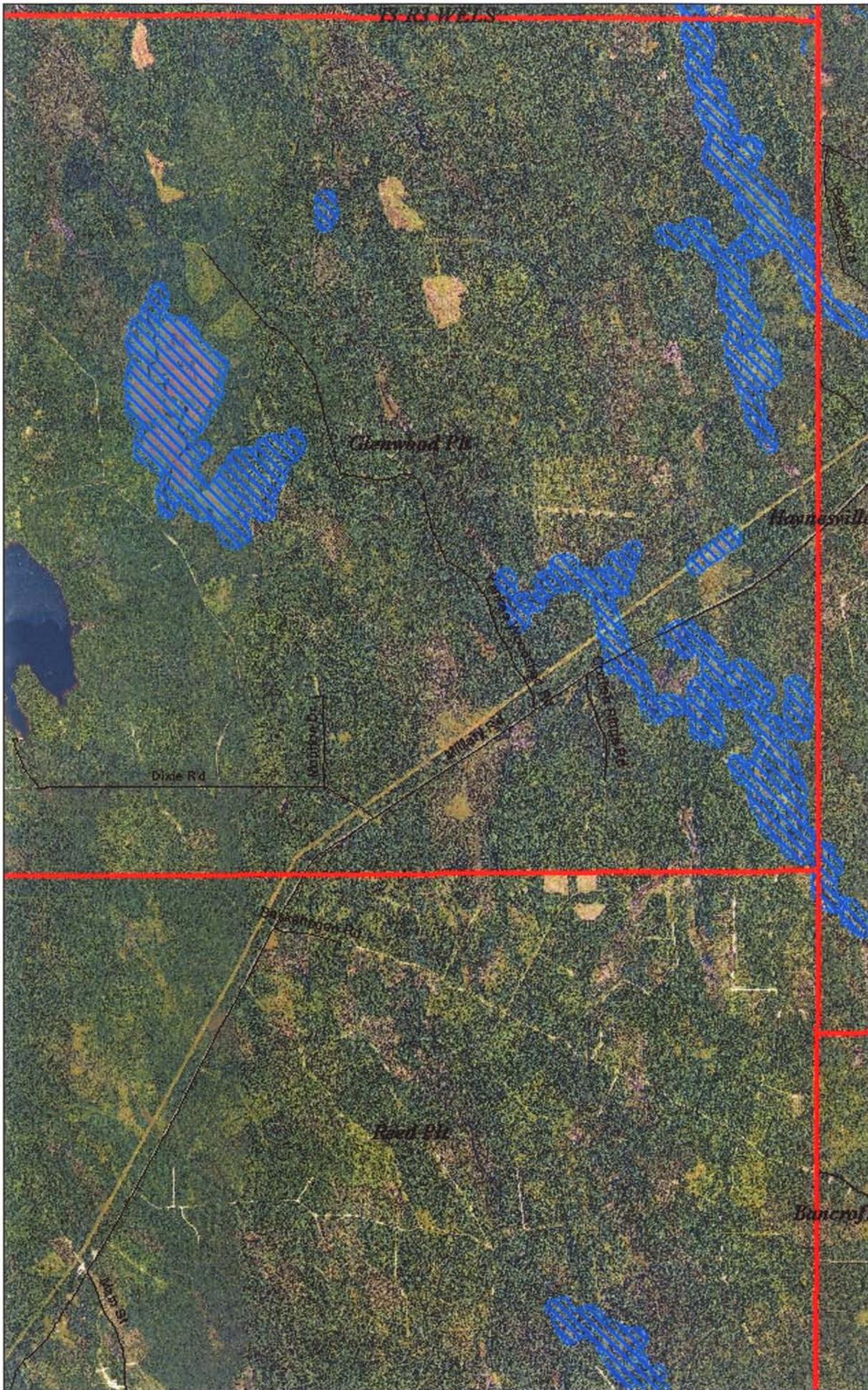




**Map 9**  
**Glenwood Pt, ME**  
**Streams and Wetlands**

1:60,000  
1 inch = 5,000 feet

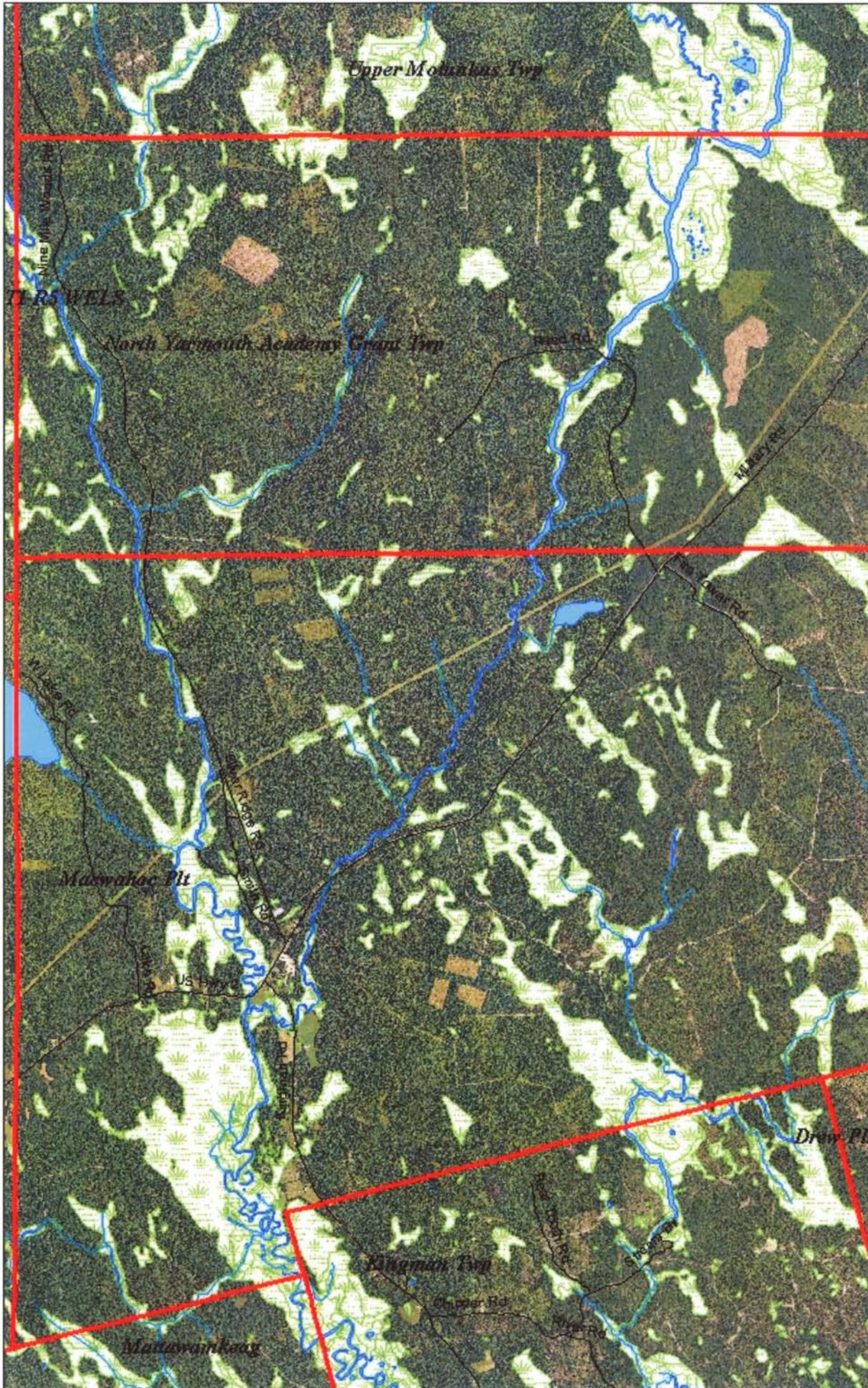




Map 10  
Glenood Pt, ME  
Inland Wading  
Bird Habitat

1:60,000  
1 inch = 5,000 feet





Map 11

Macwahoc PLT, ME

Streams and  
Wetlands

1:60,000  
1 inch = 5,000 feet





Map 12  
Macwahoc PLT, ME  
Inland Wading  
Bird Habitat

1:60,000  
1 inch = 5,000 feet





Map 13  
Molunkus TWP, ME  
Streams and  
Wetlands

1:60,000  
1 inch = 5,000 feet

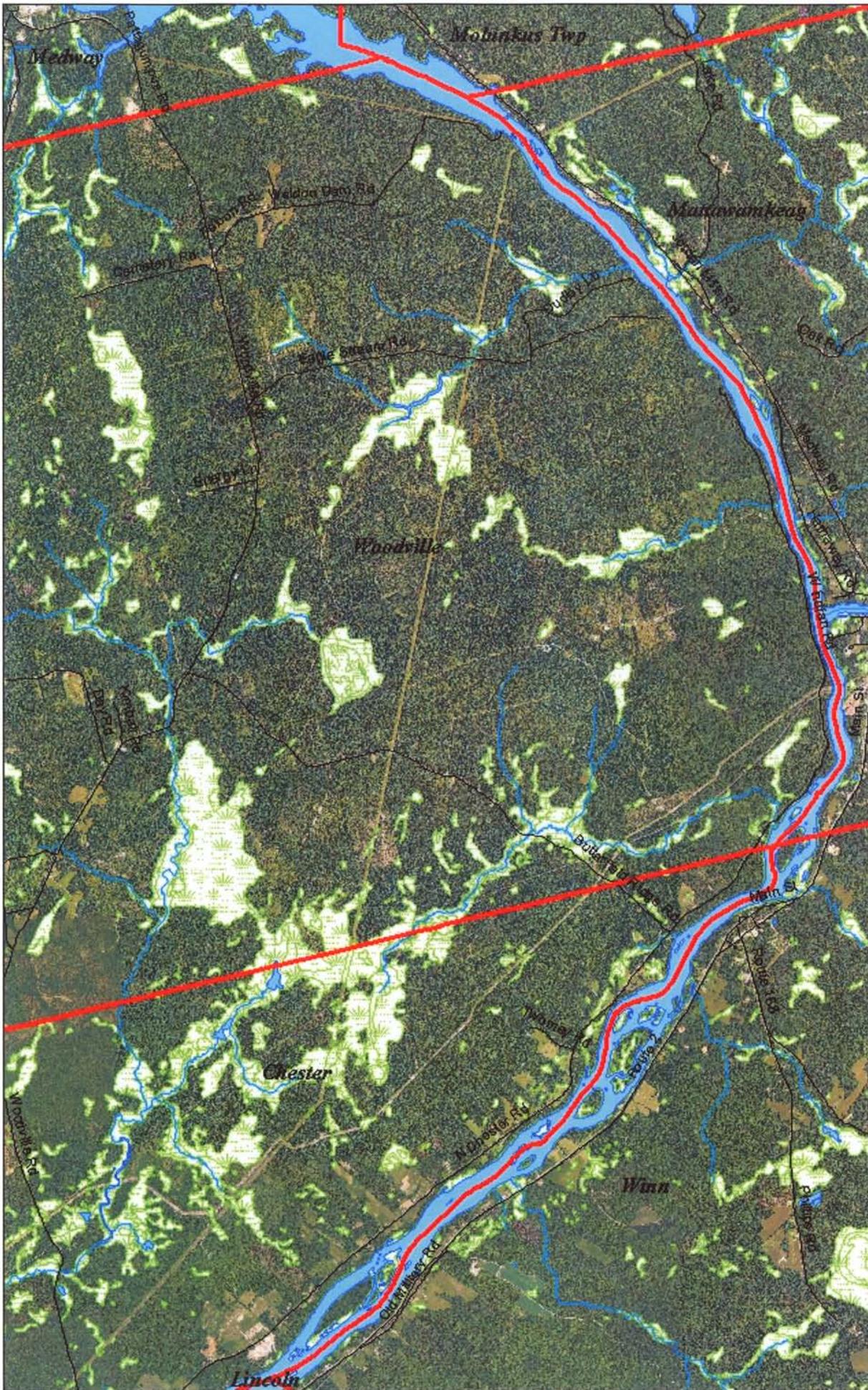




Map 14  
Molunkus TWP, ME  
Inland Wading  
Bird Habitat

1:60,000  
1 inch = 5,000 feet





Map 15  
Woodville, ME  
Streams and  
Wetlands

1:60,000  
1 inch = 5,000 feet

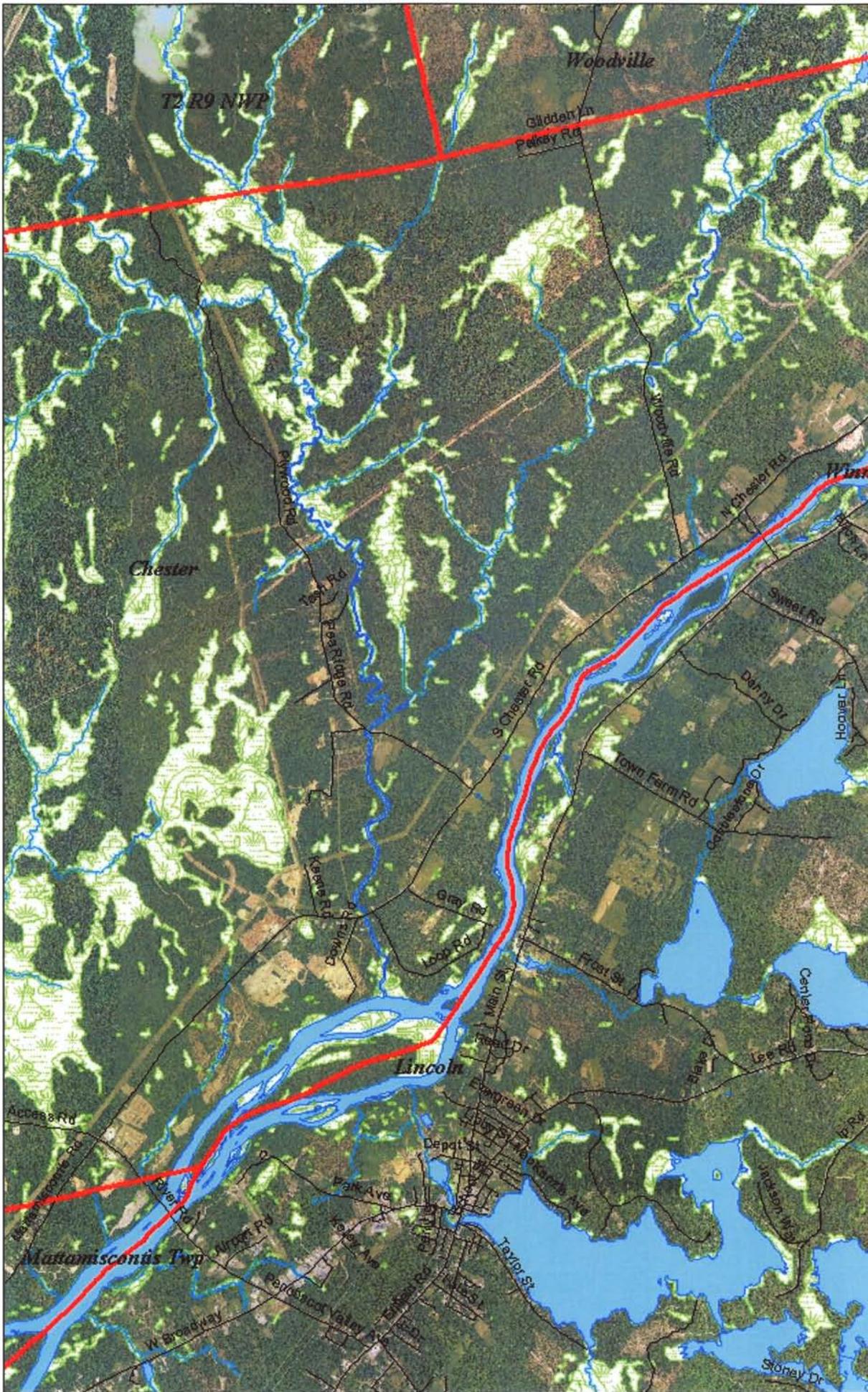




Map 16  
Woodville, ME  
Inland Wading  
Bird Habitat

1:60,000  
1 inch = 5,000 feet



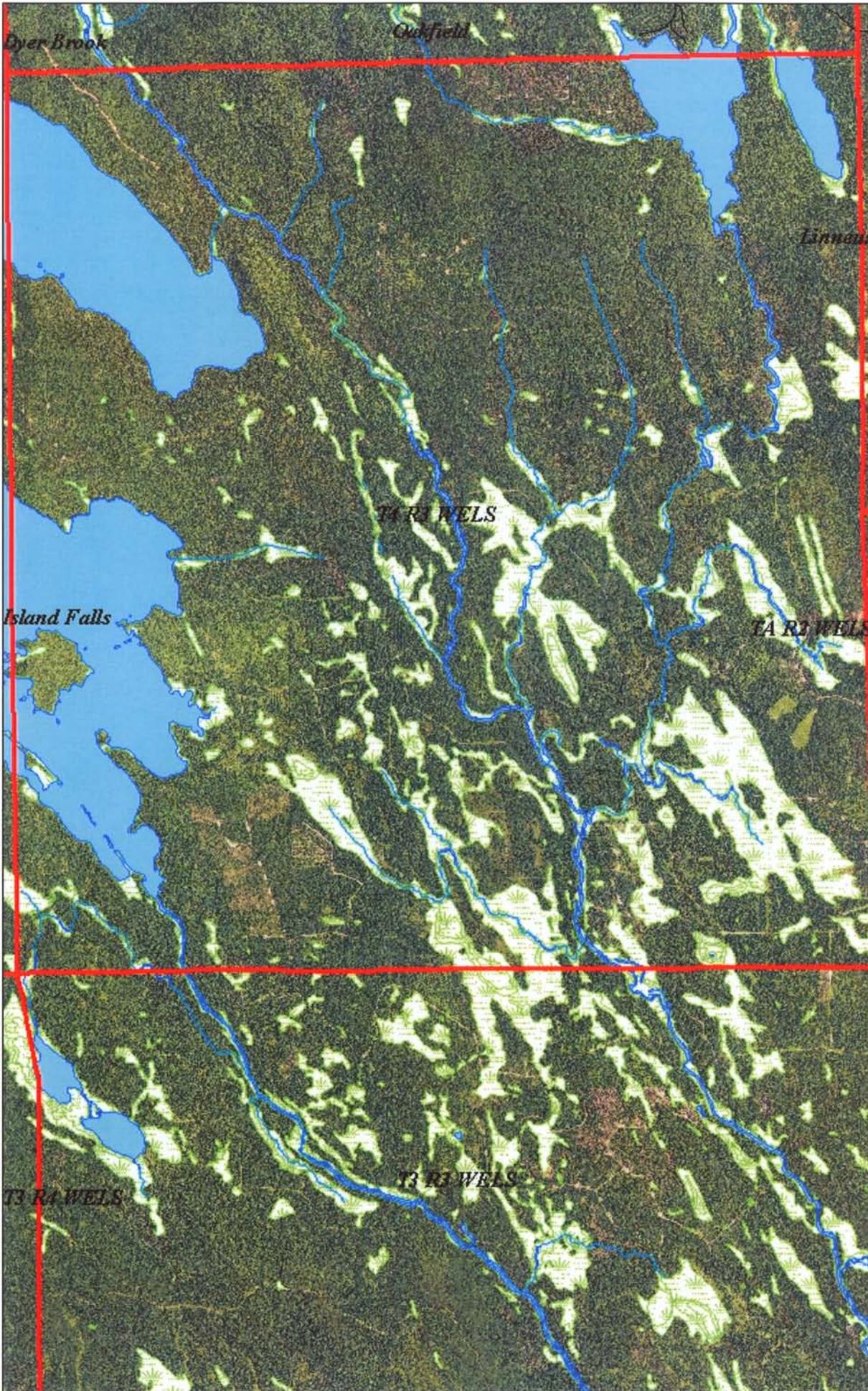


Map 17  
Chester, ME  
Streams and  
Wetlands

1:60,000  
1 inch = 5,000 feet







Map 19  
T4 R3 WELS, ME

Streams and  
Wetlands

1:60,000  
1 inch = 5,000 feet



T4 R3 WELS

T4 R2 WELS

Map 8

T3 R3, ME

Inland Wading  
Bird Habitat

1:60,000

1 inch = 5,000 feet

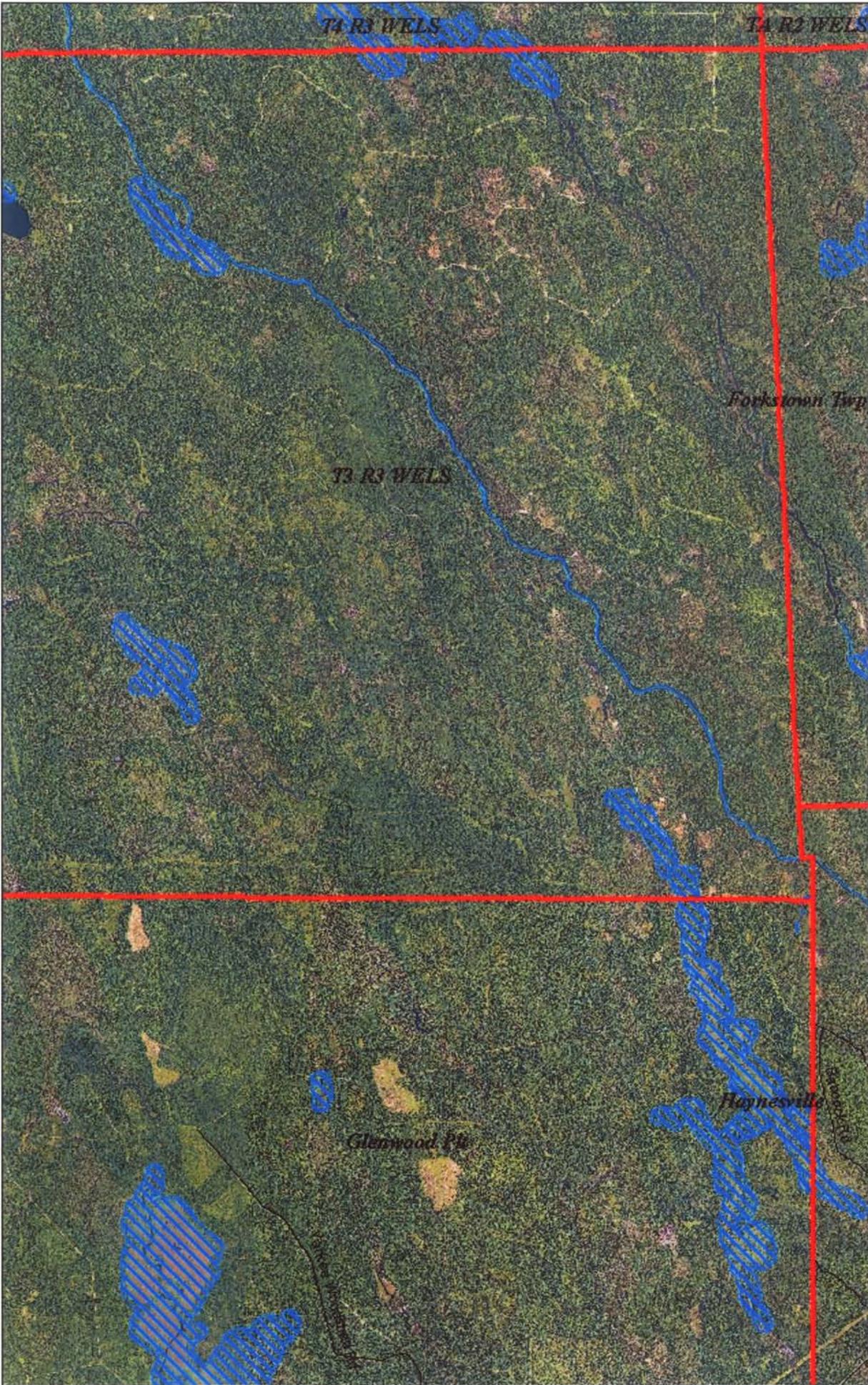
Forkston Twp

T3 R3 WELS

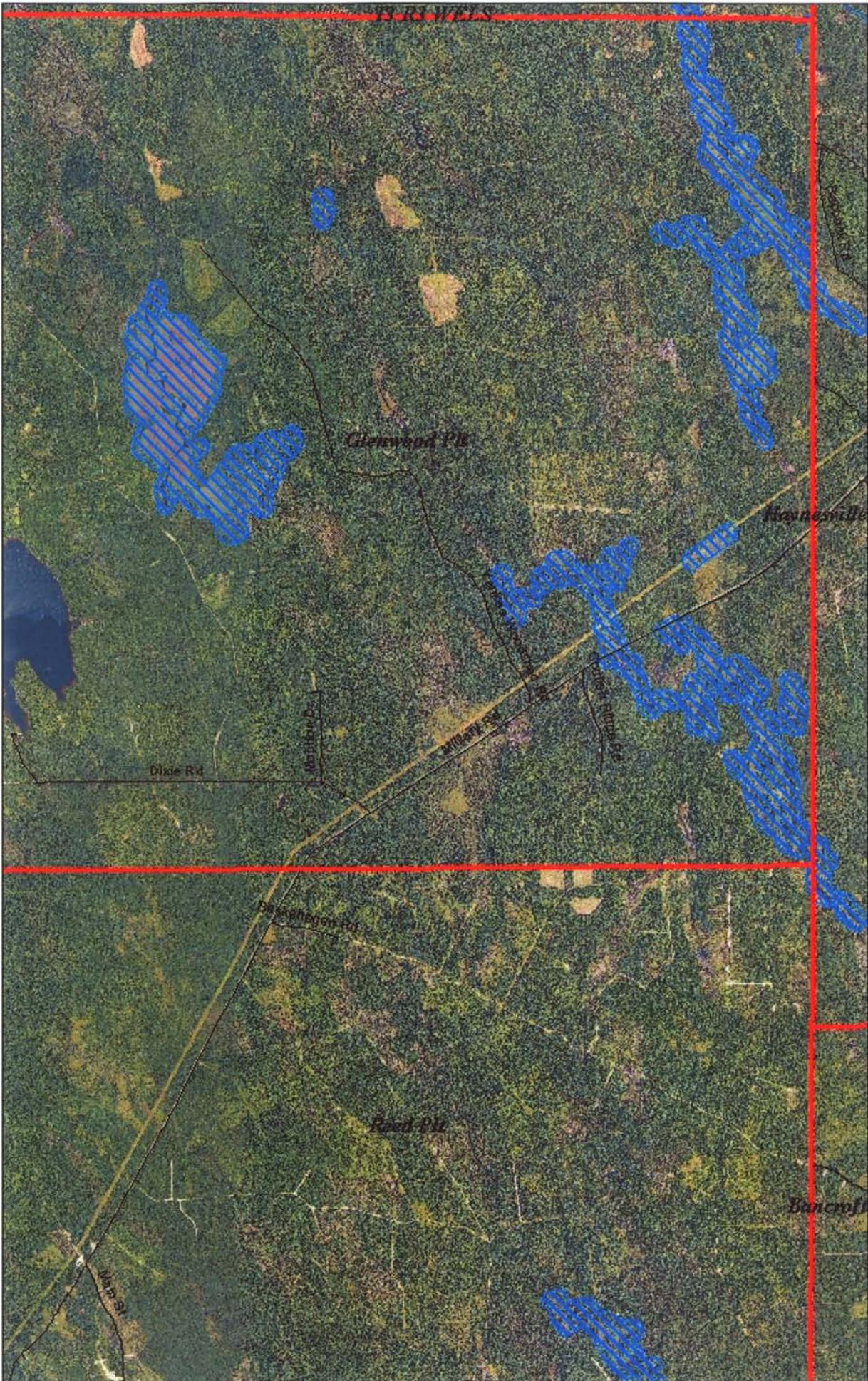


Haynesville

Glenwood Pt



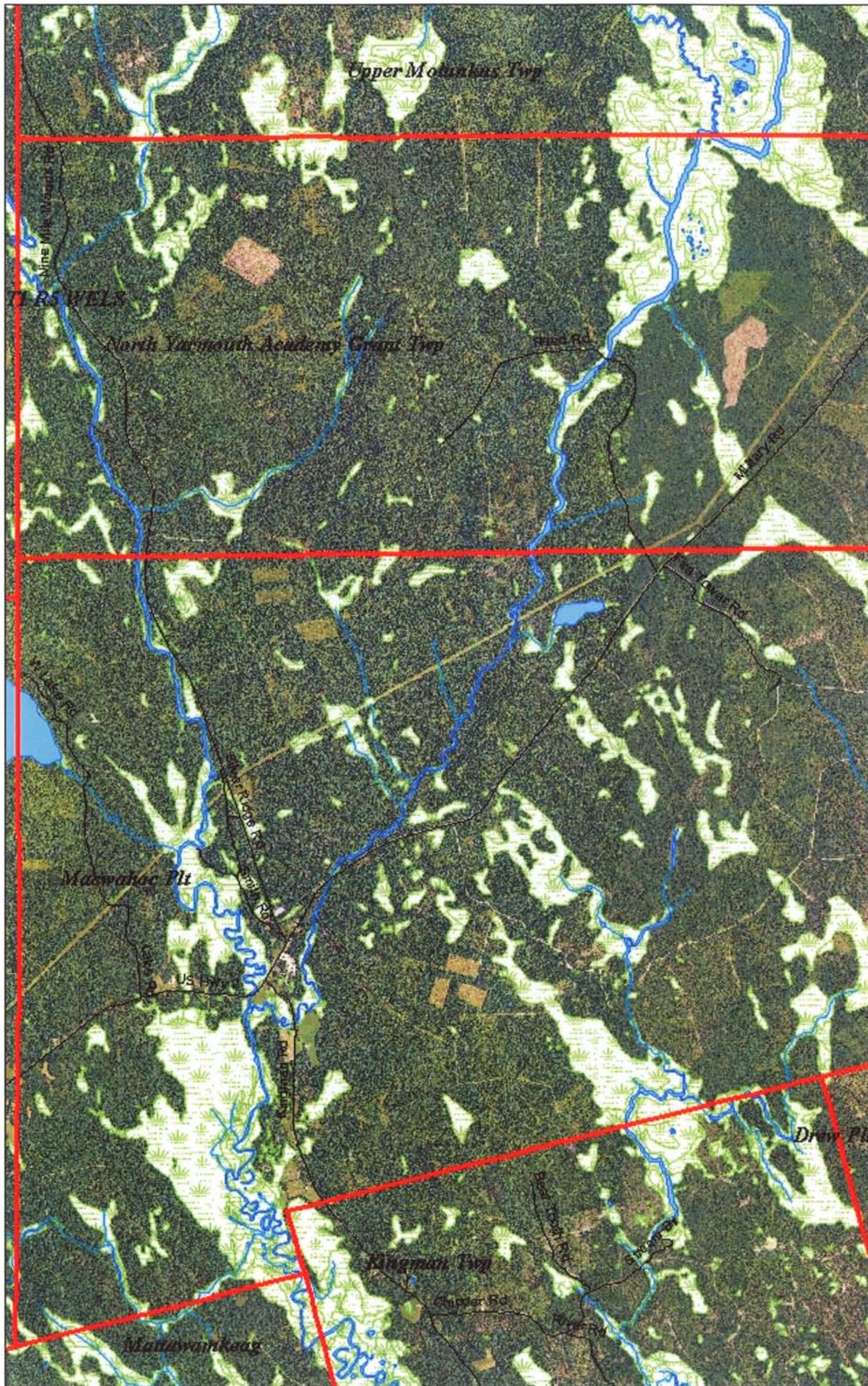




Map 10  
Glenood Pt, ME  
Inland Wading  
Bird Habitat

1:60,000  
1 inch = 5,000 feet

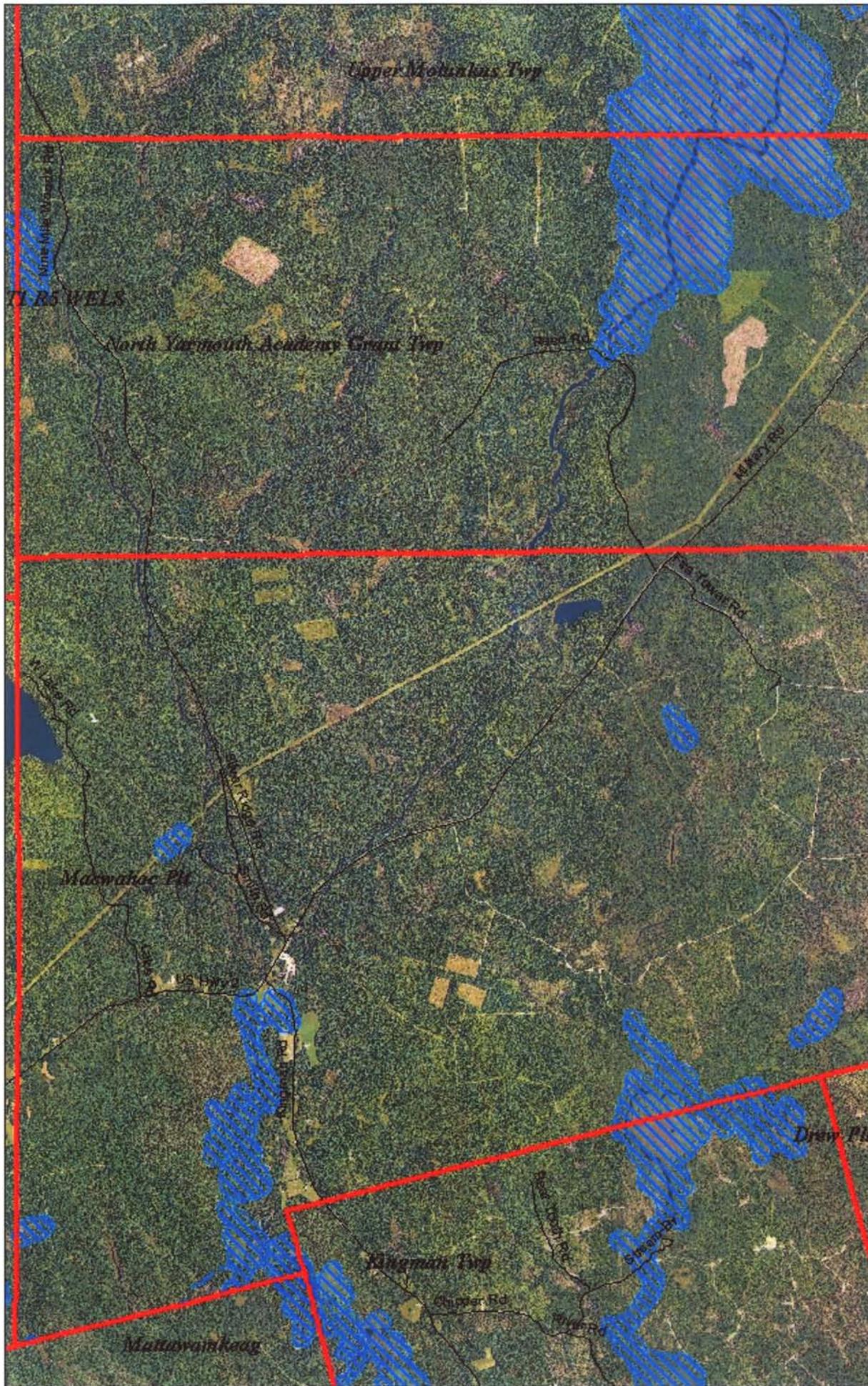




Map 11  
Macwahoc PLT, ME  
Streams and Wetlands

1:60,000  
1 inch = 5,000 feet





Map 12  
Macwahoc PLT, ME  
Inland Wading  
Bird Habitat

1:60,000  
1 inch = 5,000 feet



*Oakfield*

Map 6

T4 R3, ME

Inland Wading  
Bird Habitat

*Linneaus*

1:40,000  
1 inch = 3,333.33 feet



*T4 R3 WELS*

*T4 R3 WELS*

*T4 R3 WELS*



T4 R3 WELS

T4 R2 WELS

Map 7

T3 R3, ME

Streams and  
Wetlands

1:60,000  
1 inch = 5,000 feet

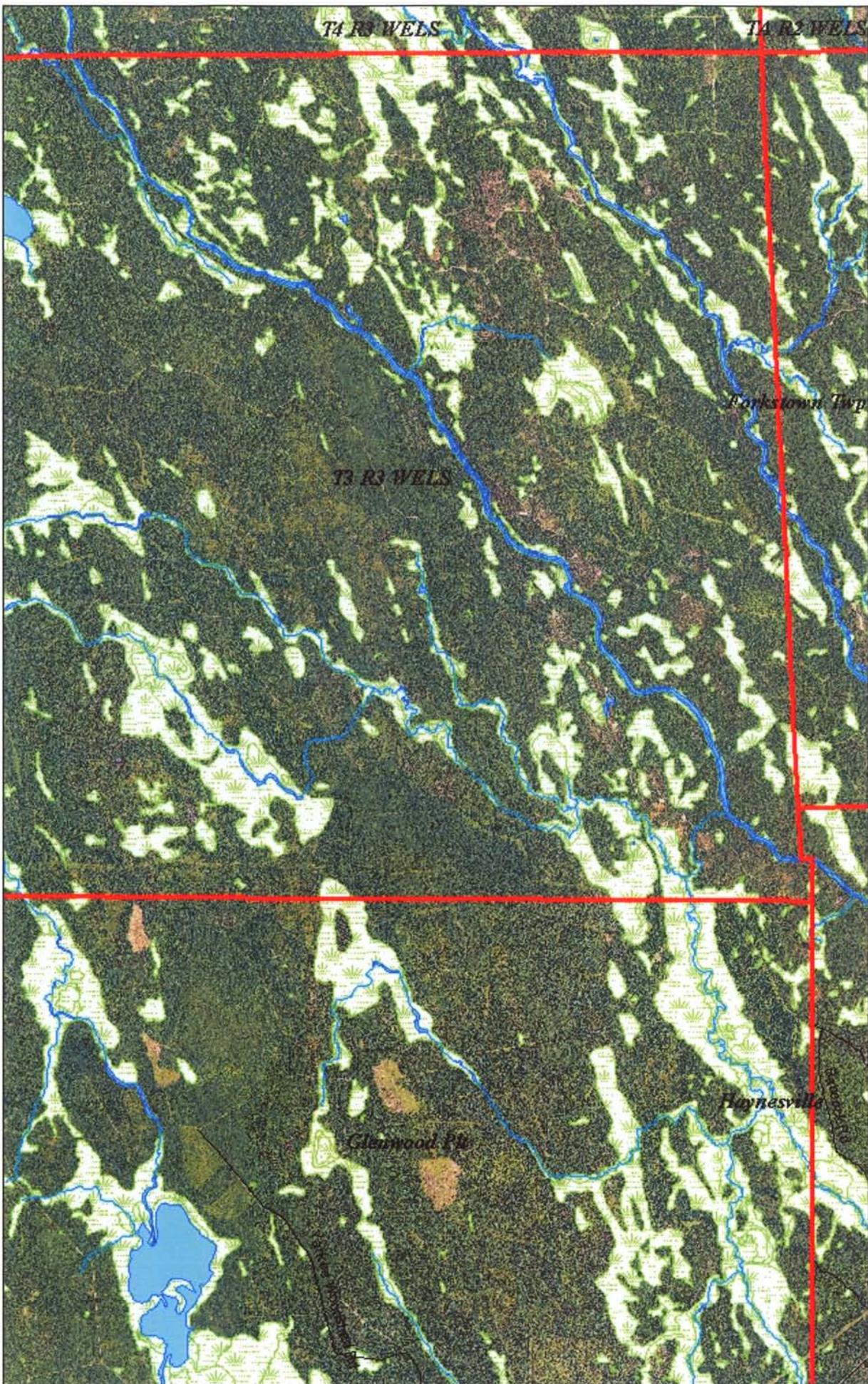


T3 R3 WELS

*Parkston Twp*

*Glenwood Pt*

*Haynesville*



*Outfield*

Map 5

T4 R3, ME

Streams and  
Wetlands

*Linneus*

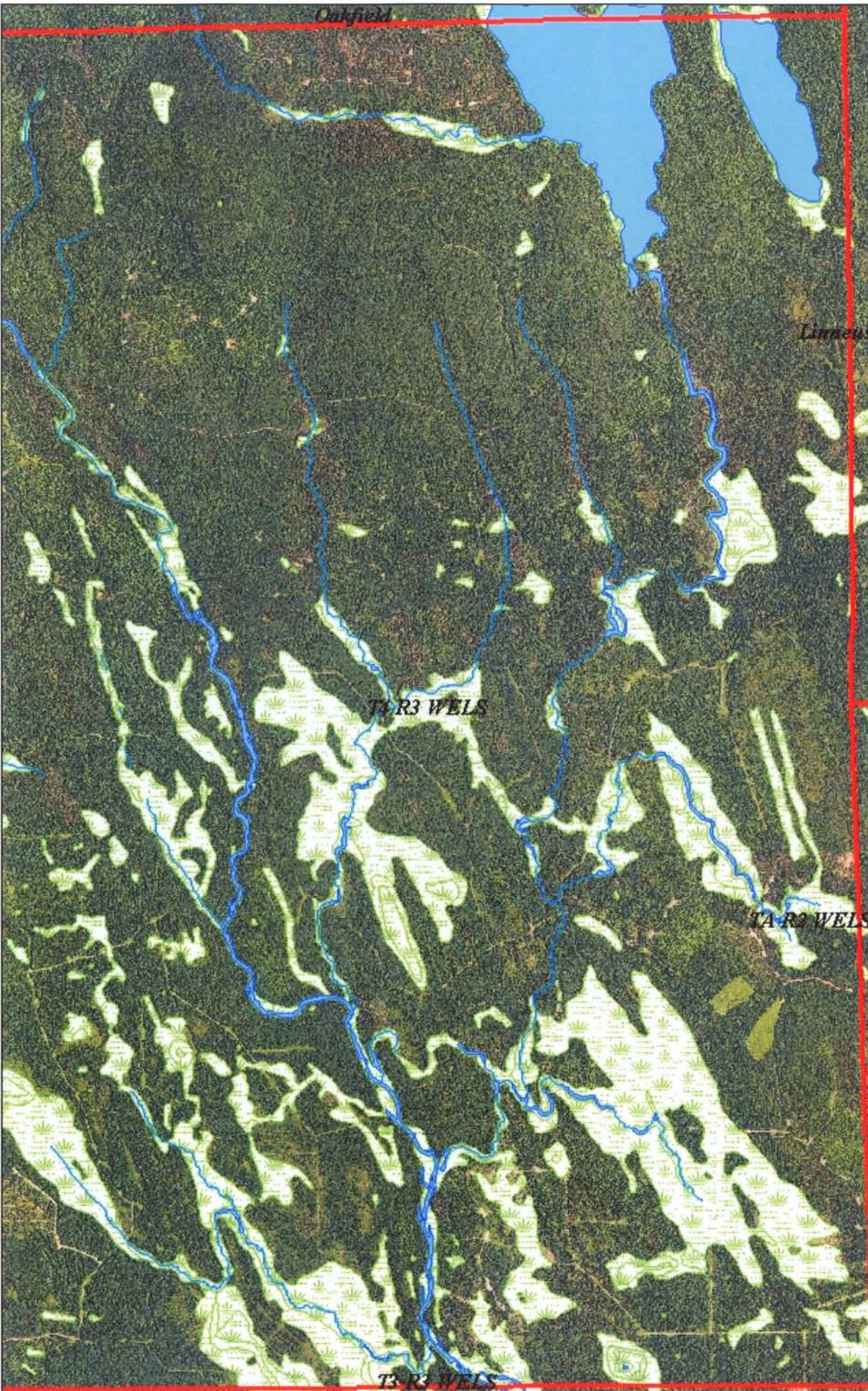
1:40,000  
1 inch = 3,333.33 feet

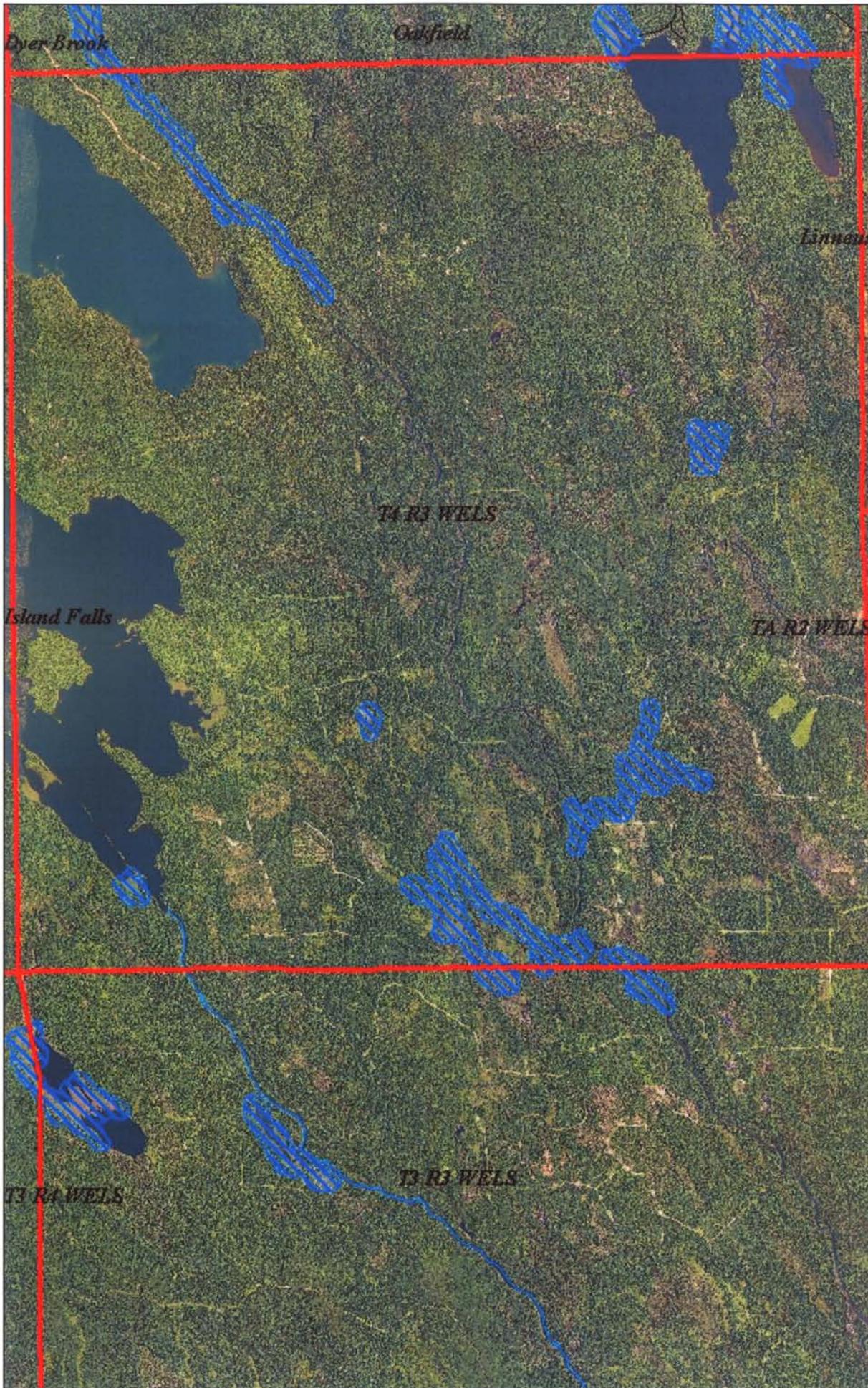


*T4 R3 WELS*

*T4 R2 WELS*

*T4 R3 WELS*





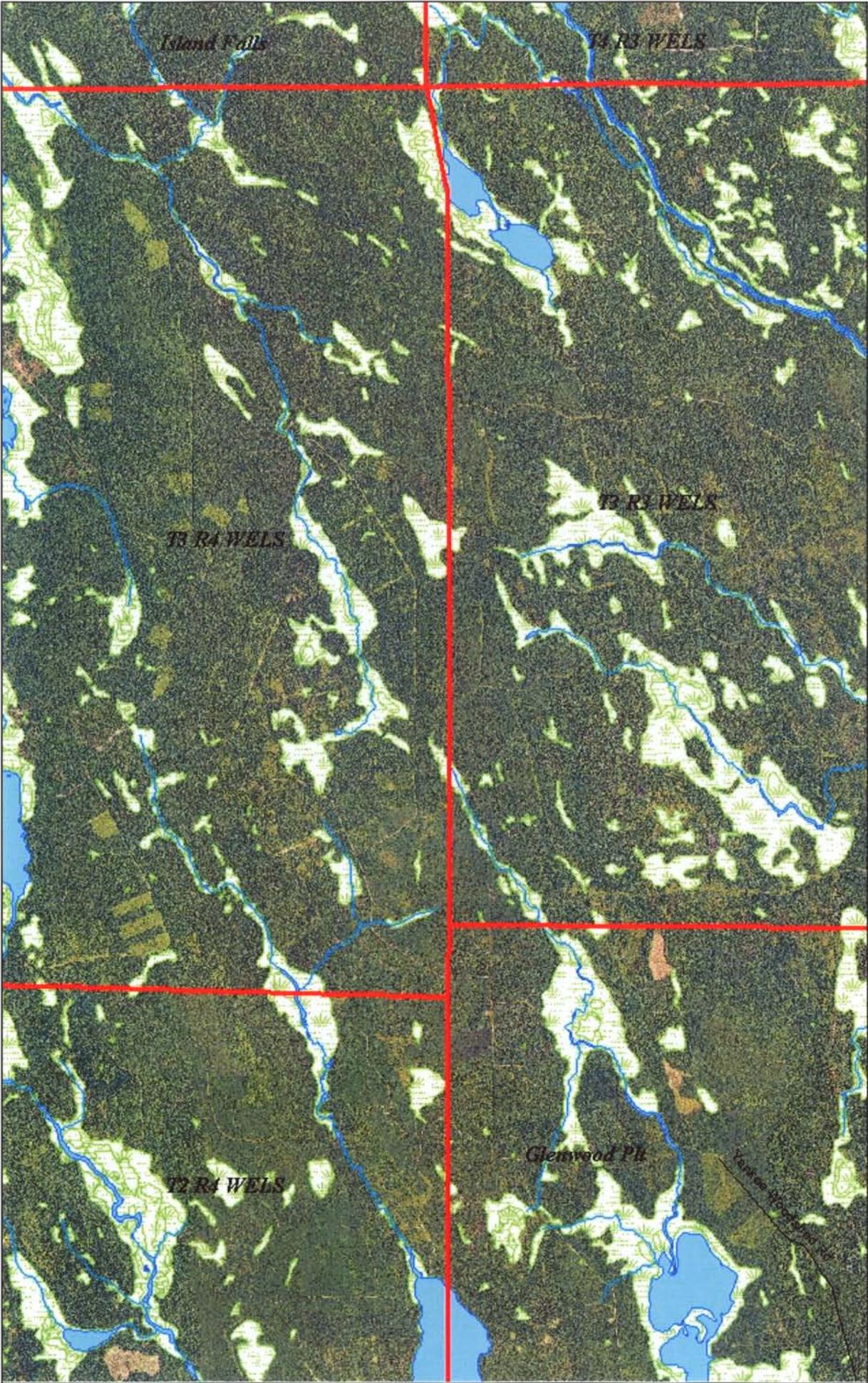
Map 20

T4 R3 WELS, ME

Inland Wading  
Bird Habitat

1:60,000  
1 inch = 5,000 feet





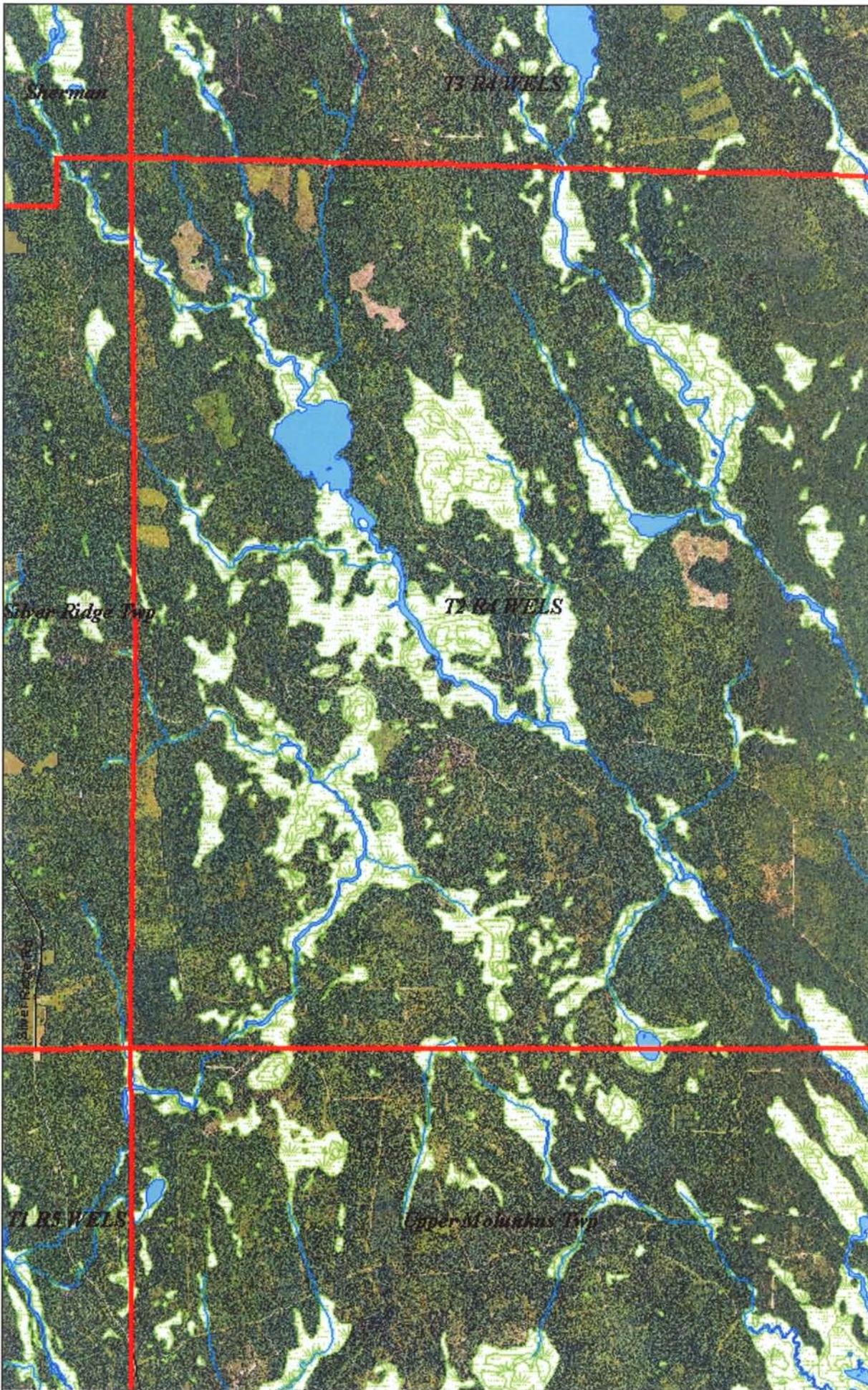
Map 21

T3 R3, T3R4, ME

Streams and  
Wetlands

1:60,000  
1 inch = 5,000 feet





Map 23  
Silver Ridge,  
T2R4, ME  
Streams and  
Wetlands

1:60,000  
1 inch = 5,000 feet



11 R5 WELS

11 R5 WELS

Upper Molokas Twp



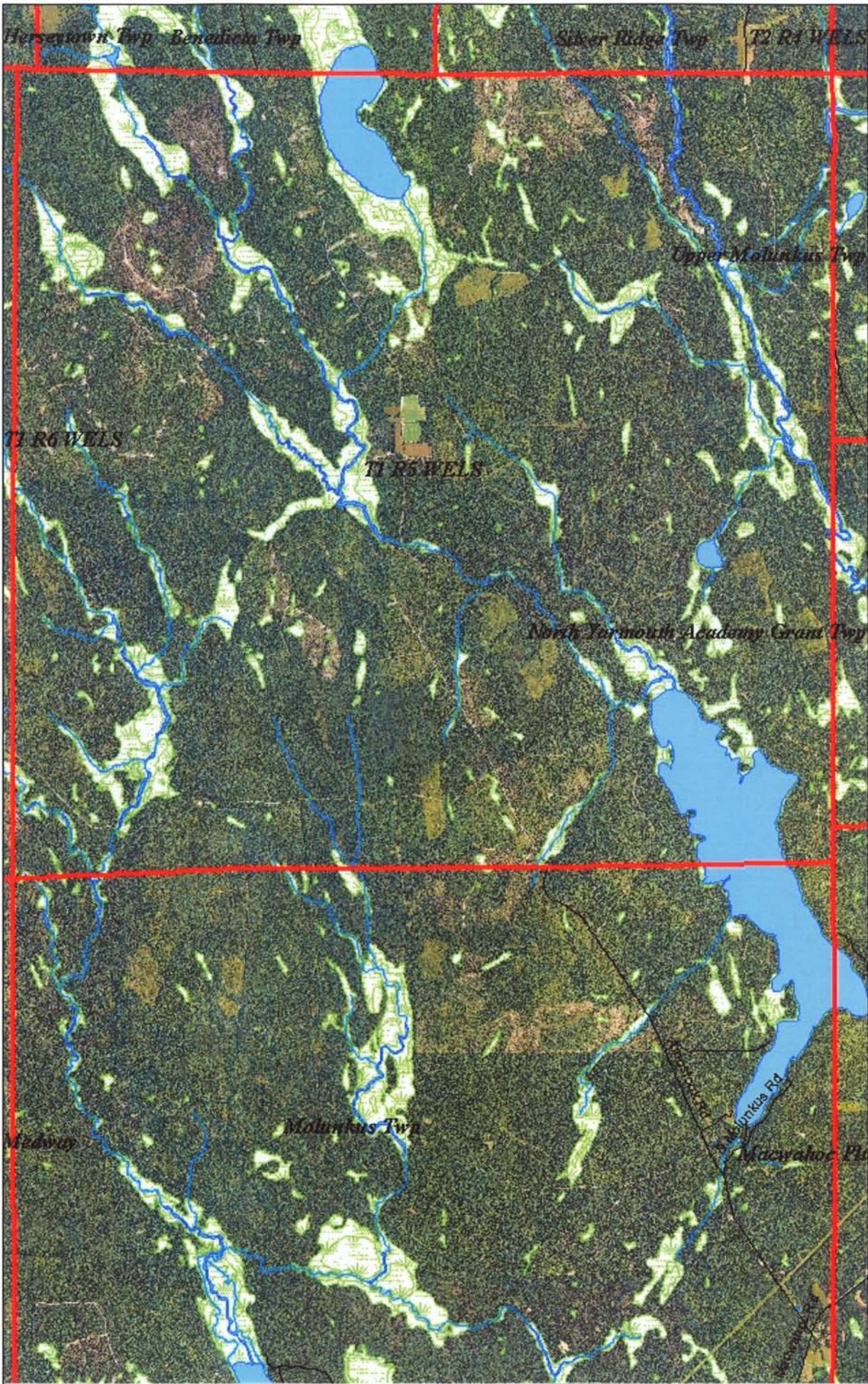
Map 24

Silver Ridge,  
T2R4, ME

Inland Wading  
Bird Habitat

1:60,000  
1 inch = 5,000 feet





Map 25

T1R5, ME

Streams and  
Wetlands

1:65,000  
1 inch = 5,416.67 feet





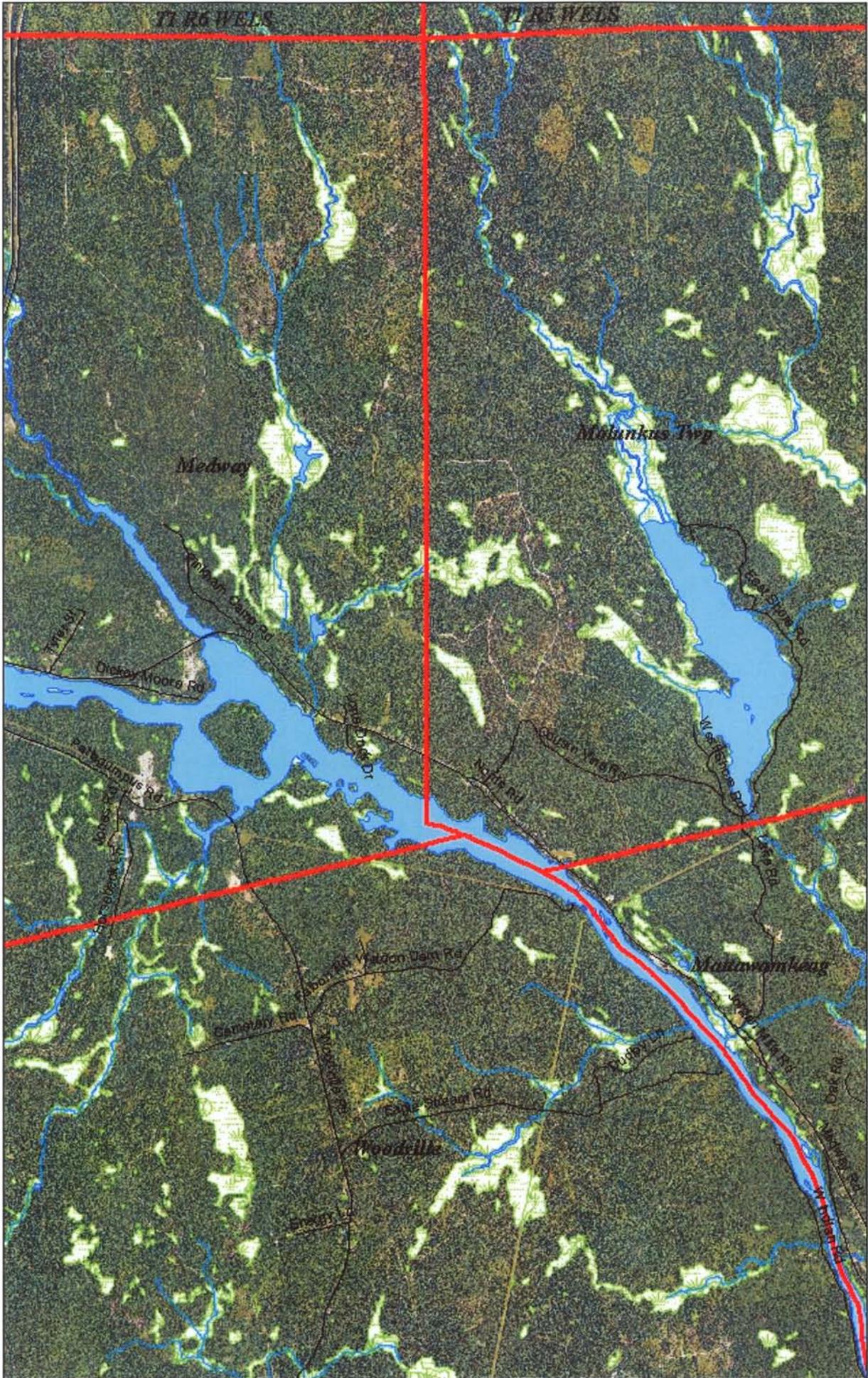
Map 26

T1R5, ME

Inland Wading  
Bird Habitat

1:65,000  
1 inch = 5,416.67 feet





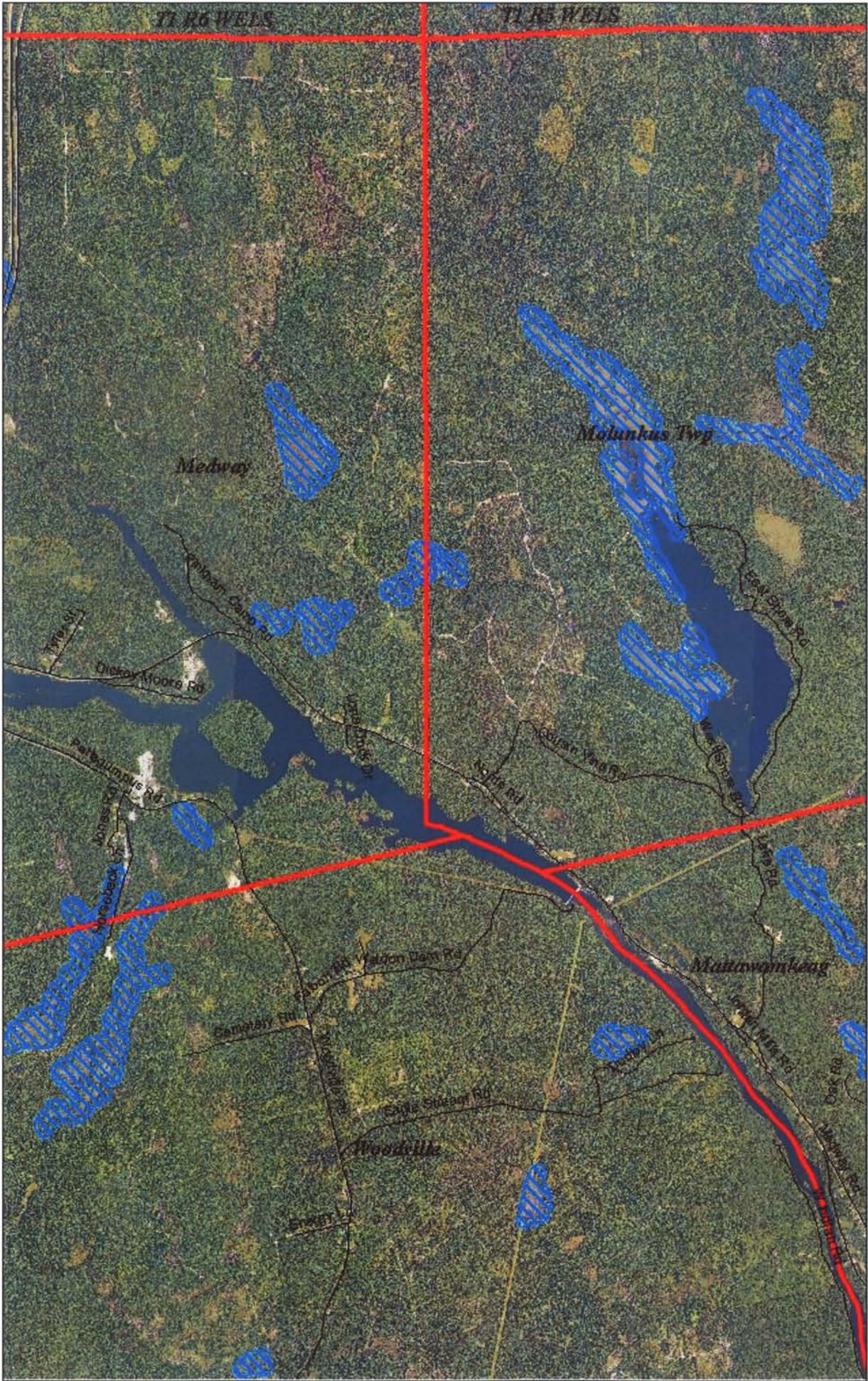
Map 27

Medway, ME

Streams and  
Wetlands

1:65,000  
1 inch = 5,416.67 feet





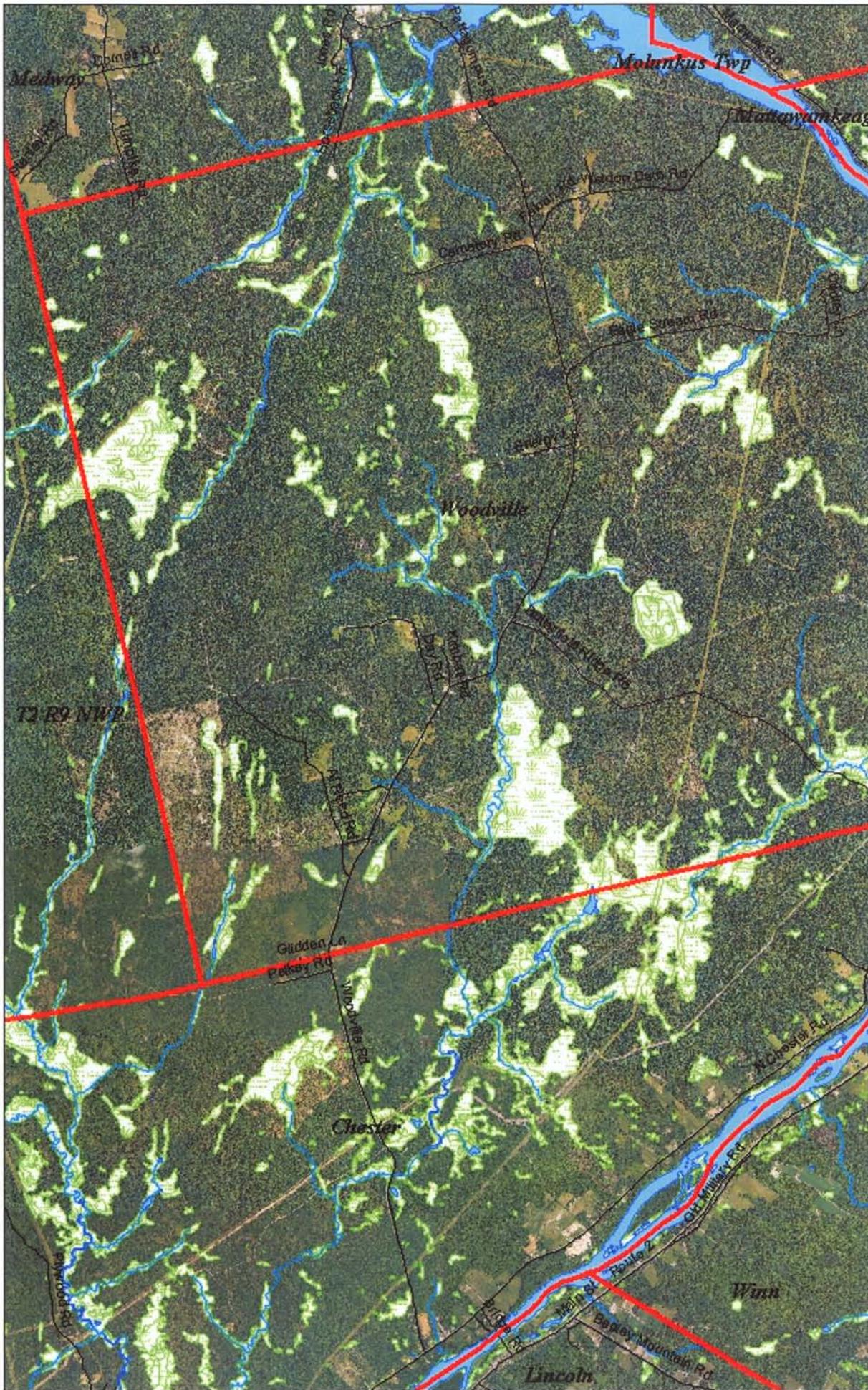
Map 28

Medway, ME

Inland Wading  
Bird Habitat

1:65,000  
1 inch = 5,416.67 feet

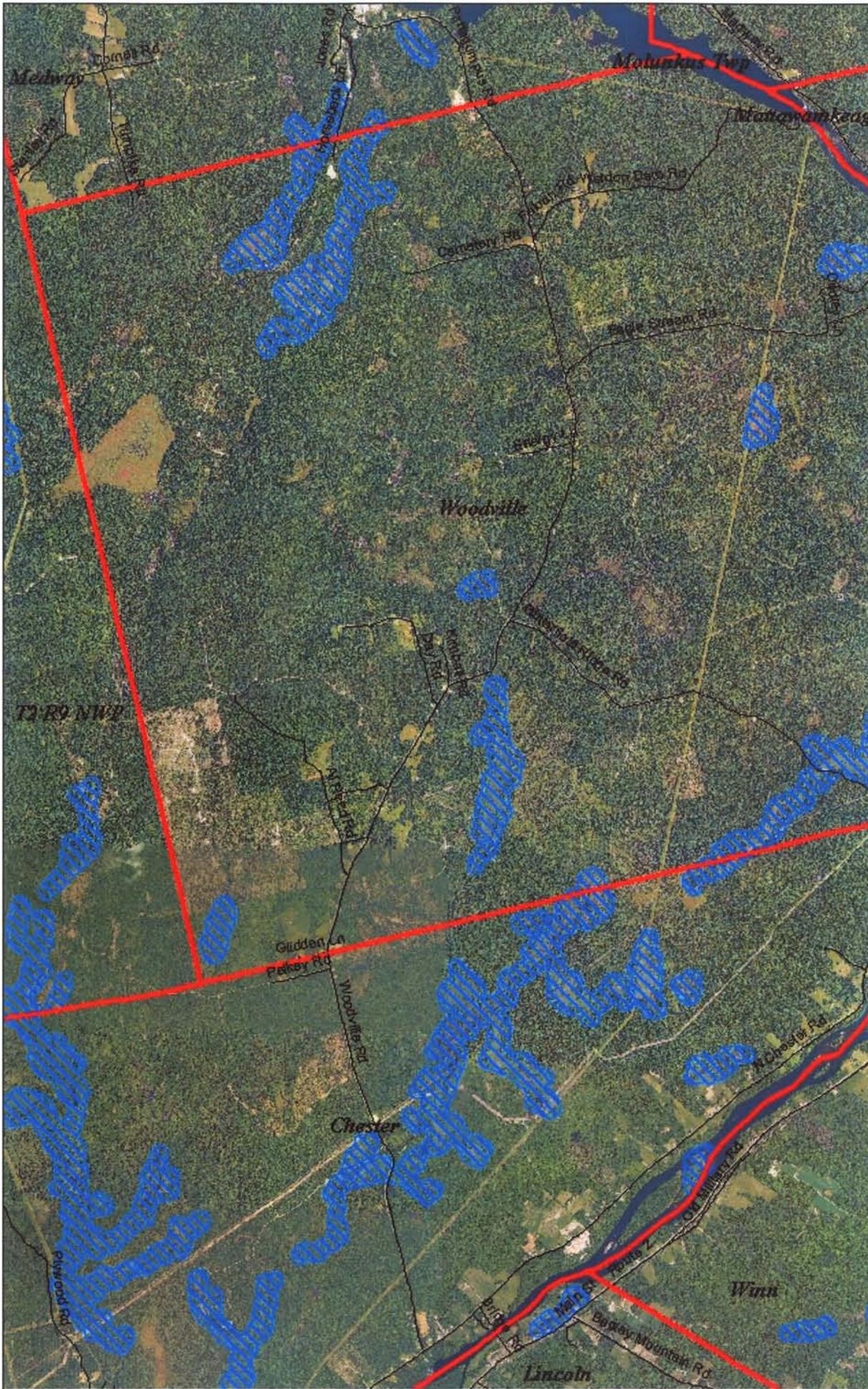




Map 29  
Woodville T2R9, ME  
Streams and  
Wetlands

1:65,000  
1 inch = 5,416.67 feet





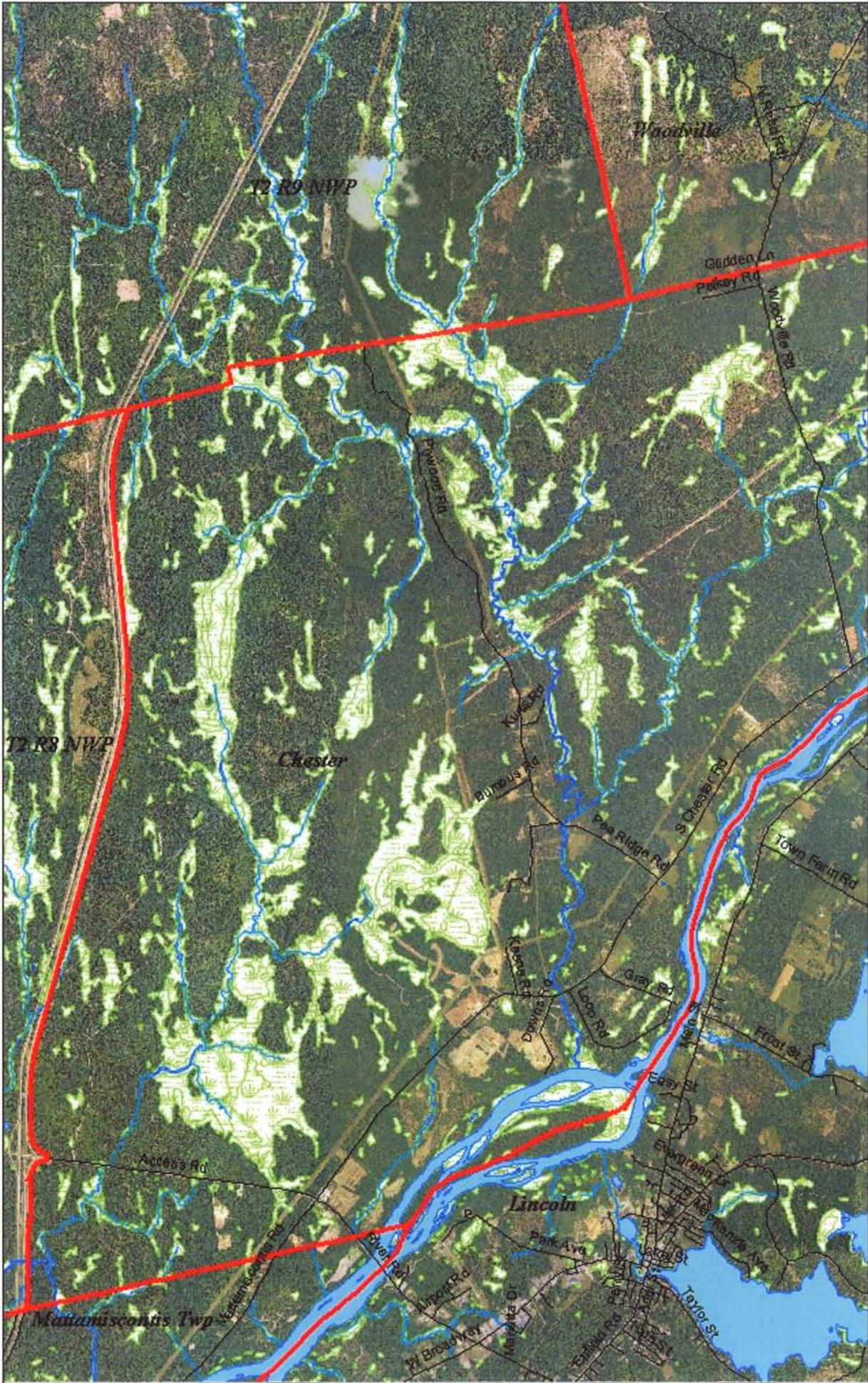
Map 30

Woodville T2R9, ME

Inland Wading  
Bird Habitat

1:65,000  
1 inch = 5,416.67 feet

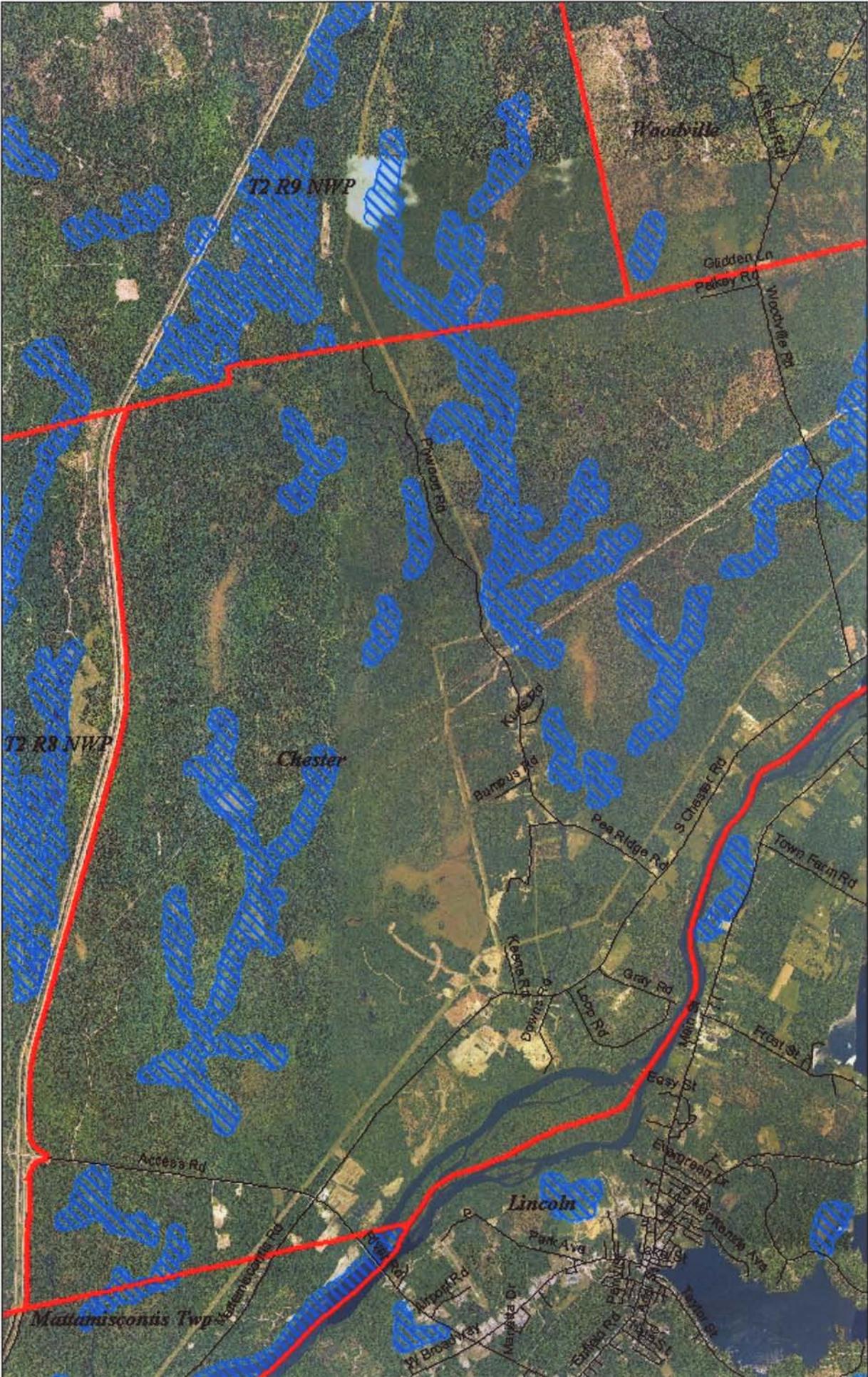




**Map 31**  
**Chester, ME**  
**Streams and Wetlands**

1:65,000  
1 inch = 5,416.67 feet





Map 32  
Chester, ME  
Inland Wading  
Bird Habitat

1:65,000  
1 inch = 5,416.67 feet





JOHN E. BALDACCI  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF  
INLAND FISHERIES & WILDLIFE  
284 STATE STREET  
41 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0041

ROLAND MARTIN  
COMMISSIONER

March 26, 2009

Ms. Joy Prescott  
Project Manager  
Stantec  
30 Park Drive  
Topsham, Maine 04086

Dear Joy:

Thank you for sending your written response with maps and additional information in reference to our letter of March 10, 2009. At this stage in preconstruction monitoring for the Oakfield Wind Power Project no additional studies are warranted for birds or bats in nocturnal radar studies or for migration raptor counts.

Reference your second bullet in your letter of March 16<sup>th</sup>, there may have been some confusion in our request, but we were looking for a scatter plot between flight height and passage rate (X = passage rate, Y = flight height) in order to demonstrate a predictive relationship between the 2 data sets. The raw data would be fine if necessary and we could plot this out. If you still have questions related to this request please let me know.

The "rare animal forms" do not need to be completed for flybys by eagles. They should be used for a potential breeding record or any other occurrence for E/T or Special Concern (SC) species. There may be some SC bird species on the list we can discuss due to frequency of occurrence such as White-throated sparrow, and Veery but we can deal with this if conditions arise. The main bird species we would be concerned about would hedge around all E/T species, Rusty Blackbird, Olive-sided Flycatcher, and Bicknell's Thrush. We would like this form to be used for all E/T and SC bat species if possible.

Reference your comment concerning the expansion sites as outlined on map along the Oakfield Hills area. MDIFW feels no additional preconstruction requirements are needed for this present outlined expansion zone due to its juxtaposition to the present primary site. The Department wants to be perfectly clear that postconstruction mortality monitoring will be requested for present primary site and expansion zone as outlined on map. If either of these two areas continues to expand outside the present Oakfield Hills area preconstruction monitoring would once again be considered.

Thank you for your time and consideration in the above mentioned sections and please keep us posted on these potential expansion plans. If you should have any further questions or would like additional explanation please let me know.

Sincerely,

Richard Hoppe  
Regional Wildlife Biologist, MDIFW  
Region G  
PO Box 447  
Ashland, Maine 04732



JOHN E. BALDACCI  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF  
INLAND FISHERIES & WILDLIFE  
284 STATE STREET  
41 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0041

ROLAND MARTIN  
COMMISSIONER

March 16, 2010

Brooke:

I have enclosed two printouts showing the project areas around the Towns of Oakfield and Dyer Brook, Aroostook County, Maine. As in the past I would suggest you contact DOC, Natural Areas to inquire about flora in the area. I would also suggest you contact Tom Hodgman, Avian biologist and Jonathan Mays, the Herpetologist both out of our Bangor Office concerning special habitats which may not have come up on my search.

Of significance would be the active eagle nest site off the West end of Drews Lake dead water, in the Town of Oakfield. If there are any other issues or concerns which I can help you with please don't hesitate to call or email.

Regards,

A handwritten signature in cursive script that reads 'Richard Hoppe'.

Richard Hoppe  
Regional Wildlife Biologist, Region G, Ashland  
PO Box 447  
Ashland, ME 04732

AqETSc

These are observations of endangered, threatened, or special concern species associated with aquatic habitats that MAY be affected by a project in the search area.

This list is a 'heads-up' for further consideration. You may wish to contact MDIFW staff about these observations:

Herps: Phillip deMaynadier or Jonathan Mays

Mussels: Beth Swartz

Other Inverts: Phillip deMaynadier or Beth Swartz

Fish: Merry Gallagher

Birds: Tom Hodgman, Lindsay Tudor, or Danielle D'Auria

=====

AQUATIC ETSC OBSERVATIONS WITHIN 2.5 MILES OF SEARCH AREA:

-----

None

RARE MUSSELS WITHIN 5 MILES OF SEARCH AREA:

-----

IMBIV02100/178 - Brook Floater  
IMBIV21050/1007 - Yellow Lampmussel  
IMBIV42030/1371 - Creeper

=====

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  - right-click and select COPY
  - Switch from Citrix to your own desktop
  - Open a new email in Outlook
  - Go to the email message area, right-click, and select PASTE
- 2) Print this file from Notepad, OR
- 3) Save this Notepad file for future reference
  - Click FILE, then SAVE AS....
  - Save as a NEW file under your personal folder.

SITE-SPECIFIC SEARCH OF WILDLIFE OBSERVATIONS and HABITAT

=====

Search Parameters

-----

County: Aroostook  
IF&W Region: G  
Township(s): T4 R3 WELS, Oakfield, Linneus, New Limerick  
Search Center: 572694 east, 5102652 north (UTM NAD83 coordinates)  
Search Area: 31.20 sq. miles  
Date: Monday, March 15, 2010

Results

-----

ESSENTIAL WILDLIFE HABITATS

Essential Habitats are areas currently or historically providing physical/biological features essential to conserving an endangered/threatened species in Maine and that may require special management consideration. These areas are identified and mapped by MDIFW and adopted through public rulemaking procedures following Maine's Administrative Procedures Act. Since 1989, designation criteria and protection guidelines have been developed for bald eagles, roseate terns, least terns, and piping plovers. Addition of new areas and deletion of areas no longer eligible is a continuing process.

The Maine Endangered Species Act prohibits state agencies or municipal governments from permitting, licensing, funding, or carrying out projects that would significantly alter a designated Essential Habitat or that would violate its protection guidelines. If a project site is partly or wholly within an Essential Habitat, it must be evaluated by MDIFW before state/municipal permits can be approved or project activities can occur. Designation of Essential Habitat establishes a standardized review process within existing state and municipal permitting processes. Activities of private landowners are not affected by Essential Habitat designation unless they require a state or municipal permit or are funded or carried out by a state agency or municipality.

This regulatory tool is used only when habitat loss is a major limit to species recovery. Criteria for designating Essential Habitats, protection guidelines listing types of projects that must be reviewed, factors considered during project evaluations, and maps showing designated Essential Habitats are adopted in Inland Fisheries and Wildlife Rules. Essential Habitat maps and information are available from the permitting officials, MDIFW offices, and the Maine Office of GIS at <http://megis.maine.gov>.

Bald Eagle Nest Sites

Bald eagle Essential Habitat focuses on the nest site to maintain breeding habitat and prevent disturbances that may cause nest failure. A "nesting area" is a locality that contains at least one nest site and has been used by a pair of nesting bald eagles. "Occupied" means that at least one adult eagle, eagle eggs, or eagle chicks are present at any time between March 1 and July 15.

To be identified and mapped as Essential Habitat, a bald eagle nest site must be within a nesting area occupied in at least 1 of the last 3 years and have either a nest that has existed for 2 consecutive years or have the only nest in that nesting area. All nest sites in a nesting area designated as Essential Habitat will be deleted if the nesting area has not been occupied at any time during the last 5 years. An individual nest site within an active nesting area will be deleted if a nest structure has not existed at any time during the last 5 years or the

Commissioner of MDIFW determines that the site is no longer suitable nesting habitat.

Nest Site Number  
344A

Piping Plover / Least Tern Nesting, Feeding, and Brood-rearing Areas  
None Found

Roseate Tern Nesting Areas  
None Found

NATURAL RESOURCE PROTECTION ACT (NRPA) HABITATS

Title 38, Chapter 3, Article 5-A, Section 480 of M.R.S.A. identifies habitats protected under the Natural Resources Protection Act (NRPA). Included in the definitions section (480-B) is "significant wildlife habitat," which means areas that have been mapped by MDIFW or are within any other protected natural resource including habitat for listed endangered/threatened animal species; high/moderate value deer wintering areas; high/moderate value waterfowl/wading bird habitat; shorebird nesting, feeding, and staging areas; seabird nesting islands; and significant vernal pools ([http://www.maine.gov/ifw/wildlife/habitat\\_data/significant\\_habitat\\_data.htm](http://www.maine.gov/ifw/wildlife/habitat_data/significant_habitat_data.htm)). Data requested for NRPA purposes should be obtained from Maine DEP.

Seabird Nesting Islands  
None Found

Deer Winter Areas

A forested area used by deer when snow depth in the open/hardwoods is > 12", deer sinking depth in the open/hardwoods is > 8", and mean daily temperatures are below 32 degrees F. Non-forested wetlands, non-stocked clearcuts, hardwood types, and stands predominated by Eastern Larch are included within the DWA only if less than 10 acres in size. Agricultural and development areas within DWAs are excluded regardless of size.

Ratings for Deer Winter Areas were based on aerial and/or ground surveys. If only an aerial survey was done (most DWAs), the rating was "indeterminate." If a follow-up ground survey was done also, the evaluation was based on 1) quality of softwood shelter, 2) intensity of deer use, and 3) size. The final rating of the DWA was determined by summing the scores for the three criteria and assigning a rating as follows: high (score of 10-12), moderate (score of 7-9.9), or low (score of 0-6.9). A regional biologist may recommend a rating change with justification and approval by the management section supervisor. No delisting criteria for regulated NRPA DWAs have been developed.

Code	Size (acres)	Rating
123002	49.3182343196	indeterminate

CODE = unique identifier of Deer Wintering Area

RATING = DWAs must have a moderate or high rating to qualify under NRPA

Inland waterfowl/wading Bird Habitats

Areas rated as high or moderate qualify as NRPA habitats. The mapped boundary includes a 250-ft upland zone that is used by wildlife associated with the

wetland. This data set was developed in accordance with NRPA and the Comprehensive Planning and Land Use Regulation Act (Growth Management).

Code	Rating	Wetland Acres
Iwwh131086	M	23.6
Iwwh131085	H	111.4
Iwwh204999	M	12.6
Iwwh131652	M	80.6358374768
Iwwh131076	H	508.9

CODE = Unique identifier assigned by MDIFW to the polygon.

RATING = Inland waterfowl/wading bird habitats with a "high" or "moderate" rating are considered as NRPA.

WETLAND ACRES = size of wetland in acres (this does not include 250-ft upland zone).

Tidal waterfowl/wading Bird Habitats  
None Found

Shorebird Areas  
None Found

Significant Vernal Pools  
None Found

LAND USE REGULATION COMMISSION (LURC) DEER WINTER AREAS AND SEABIRD NESTING ISLANDS  
None Found

ENDANGERED, THREATENED, OR SPECIAL CONCERN SPECIES OBSERVATIONS  
ETSc is designed to manage mapped habitats based on observations of wildlife species that are Endangered, Threatened, or of Special Concern. Until a habitat polygon has been mapped for an observation, the environmental review polygon is represented by a 0.25-mile circle around the observation point.

Environmental Review Polygons  
Classification of ETSc observations as Use = "Environmental Review" indicates that the habitat around the observation should receive special management consideration based on the species involved (endangered, threatened, or special concern), importance or rarity of the habitat, or whether the observation is recent or historical. Any questions regarding ETSc observations should be directed to MDIFW's species specialists in WRAS.

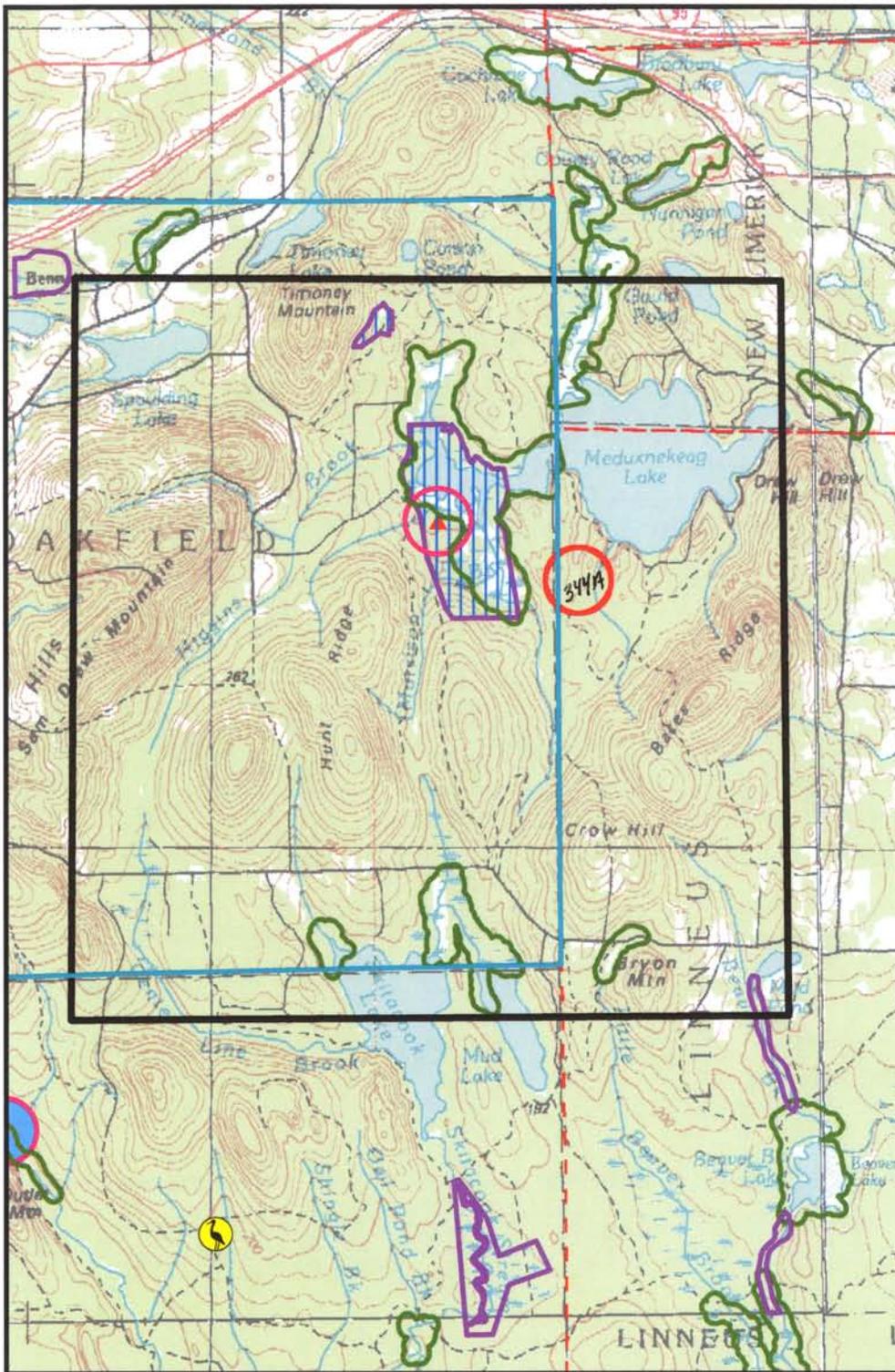
Code	ObsID	Use	Common Name
Poly_5059	4797	ER	Bald Eagle

CODE = unique identifier of habitat

OBSID = unique identifier of species observation linked to ER polygon

USE = observations are rated as environmental review (ER) or internal only (IO)

# Search for Wildlife Observations & Habitat-Oakfield



- Bald Eagle Nest Site
- Piping Plover / Least Tern Nesting, Feeding, & Brood-rearing Area
- Roseate Tern Nesting Area
- Deer Winter Area
- Inland Waterfowl / Wading Bird Habitat
- Tidal Waterfowl / Wading Bird Habitat
- Seabird Nesting Island
- Shorebird Area
- Significant Vernal Pool
- Endangered, Threatened, & Special Concern Species Habitat
- Township Boundary
- County

wind energy project-Stantec

0 0.7 1.4 2.1 2.8 Miles

1 = 83,692

UTM Projection, Zone 19N, NAD83



P.O. Box 447  
 Ashland, ME 04732-0447  
 Voice: (207) 435-3231  
 Fax: (207) 435-2009  
 March 15, 2010



AqETSC

These are observations of endangered, threatened, or special concern species associated with aquatic habitats that MAY be affected by a project in the search area.

This list is a 'heads-up' for further consideration. You may wish to contact MDIFW staff about these observations:

Herps: Phillip deMaynadier or Jonathan Mays

Mussels: Beth Swartz

Other Inverts: Phillip deMaynadier or Beth Swartz

Fish: Merry Gallagher

Birds: Tom Hodgman, Lindsay Tudor, or Danielle D'Auria

=====

AQUATIC ETSC OBSERVATIONS WITHIN 2.5 MILES OF SEARCH AREA:

-----

None

RARE MUSSELS WITHIN 5 MILES OF SEARCH AREA:

-----

IMBIV02100/115 - Brook Floater  
IMBIV02100/176 - Brook Floater  
IMBIV02100/177 - Brook Floater  
IMBIV02100/178 - Brook Floater  
IMBIV21050/977 - Yellow Lampmussel  
IMBIV21050/1007 - Yellow Lampmussel  
IMBIV21050/1012 - Yellow Lampmussel  
IMBIV42030/1369 - Creeper  
IMBIV42030/1371 - Creeper  
IMBIV42030/2539 - Creeper

=====

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  - highlight block of text in this message
  - right-click and select COPY
  - Switch from Citrix to your own desktop
  - Open a new email in Outlook
  - Go to the email message area, right-click, and select PASTE
- 2) Print this file from Notepad, OR
- 3) Save this Notepad file for future reference
  - Click FILE, then SAVE AS....
  - Save as a NEW file under your personal folder.

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MAINE DEPARTMENT OF INLAND FISHERIES & WILDLIFE  
P.O. Box 447, Ashland, ME 04732-0447  
Phone: (207) 435-3231, FAX: (207) 435-2009

SITE-SPECIFIC SEARCH OF WILDLIFE OBSERVATIONS and HABITAT

=====

Search Parameters

-----

County: Aroostook  
IF&W Region: G  
Township(s): T4 R3 WELS, Hersey, Island Falls, Dyer Brook, Crystal, Oakfield  
Search Center: 559514 east, 5099256 north (UTM NAD83 coordinates)  
Search Area: 37.99 sq. miles  
Date: Monday, March 15, 2010

Results

-----

ESSENTIAL WILDLIFE HABITATS

Bald Eagle Nest Sites  
None Found

Piping Plover / Least Tern Nesting, Feeding, and Brood-rearing Areas  
None Found

Roseate Tern Nesting Areas  
None Found

NATURAL RESOURCE PROTECTION ACT (NRPA) HABITATS

Title 38, Chapter 3, Article 5-A, Section 480 of M.R.S.A. identifies habitats protected under the Natural Resources Protection Act (NRPA). Included in the definitions section (480-B) is "significant wildlife habitat," which means areas that have been mapped by MDIFW or are within any other protected natural resource including habitat for listed endangered/threatened animal species; high/moderate value deer wintering areas; high/moderate value waterfowl/wading bird habitat; shorebird nesting, feeding, and staging areas; seabird nesting islands; and significant vernal pools ([http://www.maine.gov/ifw/wildlife/habitat\\_data/significant\\_habitat\\_data.htm](http://www.maine.gov/ifw/wildlife/habitat_data/significant_habitat_data.htm)). Data requested for NRPA purposes should be obtained from Maine DEP.

Seabird Nesting Islands  
None Found

Deer Winter Areas

A forested area used by deer when snow depth in the open/hardwoods is > 12", deer sinking depth in the open/hardwoods is > 8", and mean daily temperatures are below 32 degrees F. Non-forested wetlands, non-stocked clearcuts, hardwood types, and stands predominated by Eastern Larch are included within the DWA only if less than 10 acres in size. Agricultural and development areas within DWAs are excluded regardless of size.

Ratings for Deer winter Areas were based on aerial and/or ground surveys. If only an aerial survey was done (most DWAs), the rating was "indeterminate." If a follow-up ground survey was done also, the evaluation was based on 1) quality of softwood shelter, 2) intensity of deer use, and 3) size. The final rating of the DWA was determined by summing the scores for the three criteria and assigning a

HMaprpt

rating as follows: high (score of 10-12), moderate (score of 7-9.9), or low (score of 0-6.9). A regional biologist may recommend a rating change with justification and approval by the management section supervisor. No delisting criteria for regulated NRPA DWAs have been developed.

Code	Size (acres)	Rating
100169	978.721761345	indeterminate
123301	666.498269154	indeterminate
100170	2955.54191317	indeterminate
123300	3598.3676899	indeterminate
100169	289.49654995	indeterminate

CODE = unique identifier of Deer Wintering Area

RATING = DWAs must have a moderate or high rating to qualify under NRPA

Inland Waterfowl/Wading Bird Habitats

Areas rated as high or moderate qualify as NRPA habitats. The mapped boundary includes a 250-ft upland zone that is used by wildlife associated with the wetland. This data set was developed in accordance with NRPA and the Comprehensive Planning and Land Use Regulation Act (Growth Management).

Code	Rating	Wetland Acres
Iwwh202669	H	369.1
Iwwh202670	M	5.4
Iwwh204384	M	23.8
Iwwh204385	M	12.2
Iwwh111450	H	157.9
Iwwh111461	H	24.0650707761
Iwwh205357	M	37.8627280338
Iwwh111441	H	285.121101652
Iwwh111442	H	11.7829745518
Iwwh111443	M	14.3481829948
Iwwh111456	M	13.7236400954

CODE = Unique identifier assigned by MDIFW to the polygon.

RATING = Inland waterfowl/wading bird habitats with a "high" or "moderate" rating are considered as NRPA.

WETLAND ACRES = size of wetland in acres (this does not include 250-ft upland zone).

Tidal Waterfowl/Wading Bird Habitats

None Found

Shorebird Areas

None Found

Significant Vernal Pools

None Found

LAND USE REGULATION COMMISSION (LURC) DEER WINTER AREAS AND SEABIRD NESTING ISLANDS

None Found

ENDANGERED, THREATENED, OR SPECIAL CONCERN SPECIES OBSERVATIONS

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ETSc is designed to manage mapped habitats based on observations of wildlife species that are Endangered, Threatened, or of Special Concern. Until a habitat polygon has been mapped for an observation, the environmental review polygon is represented by a 0.25-mile circle around the observation point.

Environmental Review Polygons

Classification of ETSc observations as Use = "Environmental Review" indicates that the habitat around the observation should receive special management consideration based on the species involved (endangered, threatened, or special concern), importance or rarity of the habitat, or whether the observation is recent or historical. Any questions regarding ETSc observations should be directed to MDIFW's species specialists in WRAS.

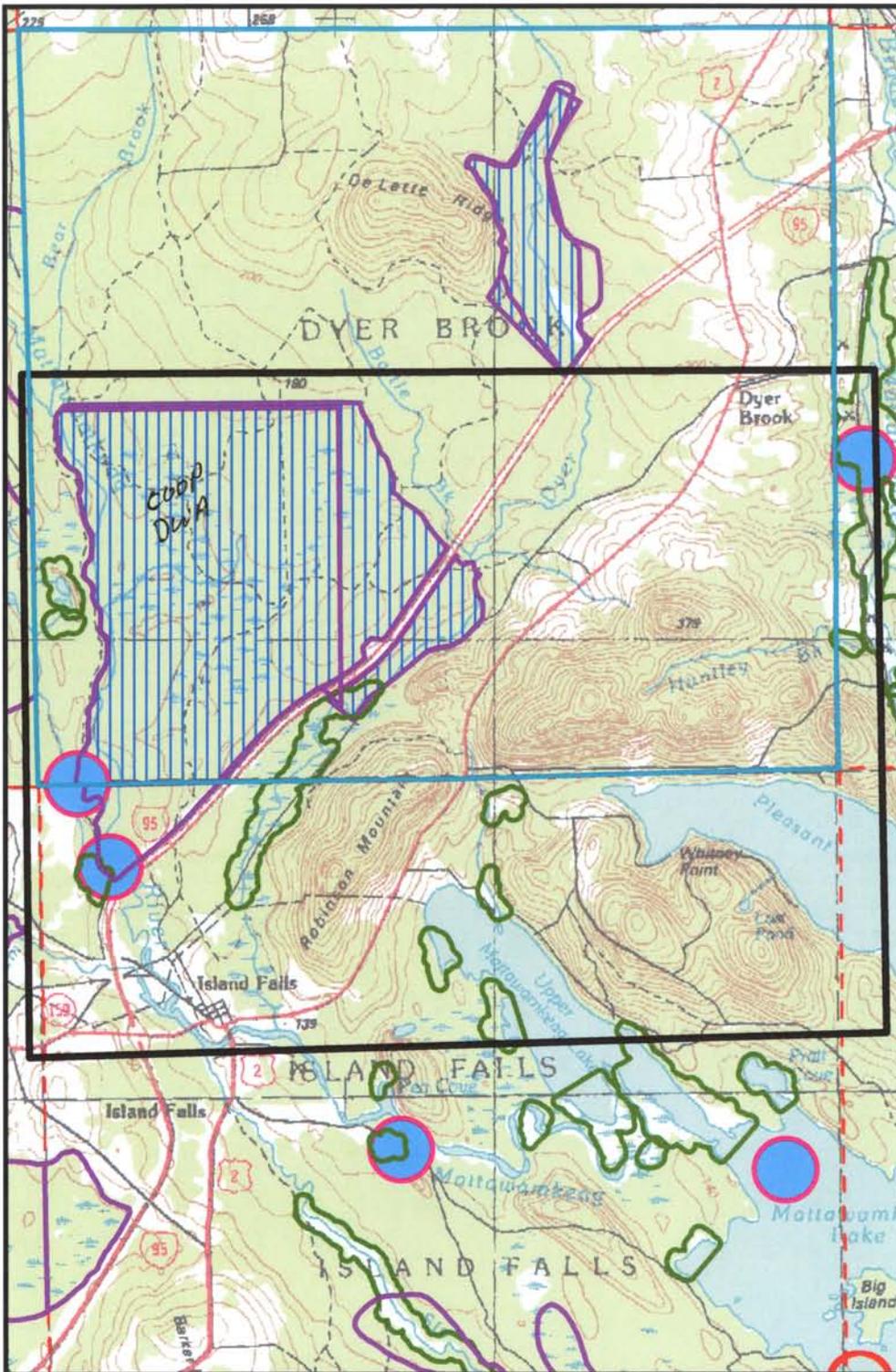
Code	ObsID	Use	Common Name
Poly_117	115	ER	Brook Floater
Poly_1373	1371	ER	Creeper
Poly_2541	2539	ER	Creeper

CODE = unique identifier of habitat

OBSID = unique identifier of species observation linked to ER polygon

USE = observations are rated as environmental review (ER) or internal only (IO)

# Search for Wildlife Observations & Habitat-Dyer Bk.



- Bald Eagle Nest Site
- Piping Plover / Least Tern Nesting, Feeding, & Brood-rearing Area
- Roseate Tern Nesting Area
- Deer Winter Area
- Inland Waterfowl / Wading Bird Habitat
- Tidal Waterfowl / Wading Bird Habitat
- Seabird Nesting Island
- Shorebird Area
- Significant Vernal Pool
- Endangered, Threatened, & Special Concern Species Habitat
- Township Boundary
- County

Wind Energy-Stantec

0 0.75 1.5 2.25 3 Miles

1 = 88,400

UTM Projection, Zone 19N, NAD83



P.O. Box 447  
 Ashland, ME 04732-0447  
 Voice: (207) 435-3231  
 Fax: (207) 435-2009  
 March 15, 2010







# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Maine Field Office – Ecological Services  
17 Godfrey Drive, Suite #2  
Orono, ME 04473  
(207) 866-3344 Fax: (207) 866-3351

In Reply Refer To: 53411-2009-I-0314  
FWS/Region5/ES/MEFO

November 23, 2009

Jennifer McCarthy  
Chief, Regulatory Division  
U. S. Army Corps of Engineers  
696 Virginia Road  
Concord, Ma 01742-2751

Dear Ms. McCarthy:

Thank you for your letter dated October 13, 2009 requesting informal consultation for an application for Evergreen Wind Power II, LLC, Oakfield Wind Project (#NAE-2009-00386) in Aroostook County, Maine. This letter provides the Fish and Wildlife Service's (Service) response pursuant to Section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

Evergreen Wind Power II, LLC proposes construction of the Oakfield Wind Project in Oakfield Maine. The project is expected to consist of 34 GE 1.5 MW turbines in Oakfield Hills. There will be four permanent 80-meter met towers and temporary 80-meter met towers at certain turbine locations during initial testing. There will be a total of approximately 15.3 miles of project roads of 12- or 32-foot width based on use. Power from the turbines will be collected in an overhead 34.5 kV lead collector line that will connect to an upgraded 69-kV line at the north end of the project. Total project footprint (clearing for turbines, new roads, transmission lines) is 256.5 acres of which 211 acres will be allowed to revegetate.

After construction all roads will be allowed to revegetate to a 12-foot width. Turbine pads and transmission line corridors will be maintained in a native shrub cover type and will provide early successional habitat for wildlife.

### **Federally listed species**

#### **Canada lynx**

The federally-threatened Canada lynx could occur in Oakfield Township in the vicinity of the proposed project, however, no confirmed occurrences of lynx are known from this township. Oakfield abuts, but is outside of the designated lynx critical habitat. Maine Inland Fisheries and



Wildlife conducted lynx snow track surveys in Herseytown (two townships to the west) and did not find lynx, but did find lynx in T7 R5 (two townships to the northwest).

Evergreen contracted with Stantec to identify lynx habitat in the project area. Maps of potential lynx habitat (regenerating softwood, dense mixed wood and deciduous stands) were developed for the entire town of Oakfield and overlaid with the project footprint. Potential lynx habitat is limited in Oakfield and is located primarily scattered areas across the southern portion of the town. Most suitable habitat occurs along the eastern border of the town, approximately three miles from the project area. The ridgetops in the Oakfield Hills and most of the project area (245.9 of 256.5 acres) is dominated by deciduous forest cover types. Potential lynx and snowshoe habitat occurs at the southern portion of the area and is comprised of 10.6 acres of softwood/mixed forest of which 1.4 acres is believed to be in conditions that currently support high hare densities. The size and distribution of patches of potential habitat at the southern portion of the project area not sufficient to support a lynx home range and lynx, however lynx may be present as they disperse through the project area.

Adverse effects to Canada lynx could occur from loss of habitat, disturbance from road construction, direct road mortality (construction phase and post-construction operation), indirect road-related mortality (public traffic on roads, increased access for hunting and trapping). The effect of wind turbine operations (sound, visual impacts) on lynx or closely-related carnivore species is unknown.

*Loss of habitat* - The project impacts 256 acres of which 211 acres will be allowed to revegetate into early successional forest. Transmission line rights of way will be allowed to revegetate into early successional forest. These areas may create small patches of snowshoe hare habitat that may be of benefit to lynx, however, much of the habitat will be dominated by hardwoods. Transmission line corridors should not present a dispersal or movement barrier to lynx. A habitat map showed that lynx habitat (boreal forest with preferred snowshoe hare habitat) is rare on ridgelines where towers, roads, and transmission lines will be constructed. About 45 acres will be converted to non-forest habitat. There will be about 10.6 acres of potential lynx habitat temporarily lost during construction, and much of this area will be allowed to revegetate after construction. The permanent footprint of this project (45 acres) represents as small amount of habitat loss for lynx in a township which already has limited potential for lynx habitat.

The construction of 15.3 miles of new roads could provide forest land owners access into new areas to harvest. However, much of the project area already has logging roads and has been recently logged.

Only 0.65 miles of 15.3 miles (4%) of new roads intersects with potential softwood-dominated lynx habitat. Habitat loss to roads will only be a few acres and is insignificant.

*Disturbance from road construction* – Most townships on industrial forestlands in northern Maine are heavily roaded with single-lane logging roads (typically 80-120 km of road per 100 km<sup>2</sup> township). Lynx occur in northern Maine in heavy roaded townships. (Usually heavily roaded townships have more intense forest management, which, in many instances have benefitted lynx.) Forest road work is common in townships where lynx occur. Maine Inland

Fisheries and Wildlife has documented lynx dens have often been found less than ¼ mile from roads. It is unlikely that new road construction will disturb lynx to a point that will adversely affect or harm (kill or cause injury) as lynx are expected to be rarely encountered in Oakfield.

*Direct road mortality (construction and post-construction)* - Lynx road mortality is not likely during or after construction. There will be hundreds of trips by large trucks and smaller vehicles to the site to construct the wind facility over a two year period. Traffic speeds (especially for large trucks) will be <20-30 mph on logging roads. About 15 lynx have been killed on logging roads in Maine from 2000-2009. Post construction traffic will be several vehicles/day. We believe risk of incidental take insignificant because lynx are expected to rarely occur in the project area.

*Indirect road-related mortality* – There will be about 15.3 miles of new road construction in Oakfield. This project will increase roads in the township by a small amount. In Maine from 2000-2009, four lynx were shot illegally and 47 lynx were reported incidentally trapped during the trapping season (about 5 to 8 reported each year). Because of the number of landowners and existing access in the project area, it is the intent of the landowner to keep all roads open to the public. Creating new roads will increase access to new areas by hunters and trappers. However, the increased probability of take by hunting for this project is insignificant and discountable. Lynx may occasionally disperse through the township and the increased likelihood of trapping a lynx in Oakfield as a result of increased access from 15.3 miles of new roads is very low.

### **Minimization measures**

The Army Corps of Engineers proposes the following measures to minimize potential impacts to the Canada lynx and its habitat as special permit conditions:

1. Upon completion of construction, the turbine pad sites (with the exception of the area within 25' radius of the turbine, and adjacent crane pad, which will remain a gravel surface), temporary shoulders of the access roads created for the crane access and lay down areas shall be stabilized, loamed, and seeded with native species to promote natural revegetation. Thos areas shall be allowed/encouraged to develop a dense growth of low ground cover and shrub species.
2. The effects of installing and operating wind turbines on Canada lynx and other carnivores is unknown. Anecdotal lynx track sightings should be documented by project personnel for a three year period after construction. The location of tracks should be mapped, photographed, and provided in a report annually to USFWS at the U. S. Fish and Wildlife Service, Maine Field Office, 17 Godfrey Drive, Suite #2, Orono, ME 04473.
3. Routine vegetation maintenance of the collector line corridor shall occur in accordance with and as outlined in the Post-Construction Vegetation Management Plan for the Oakfield Wind Project.
4. Traffic speeds during and after construction shall be kept less than 30mph (road design speed) to minimize collisions with lynx and other wildlife.

## **Additional recommendations**

The Service has no additional recommendations to minimize effects to Canada lynx.

### **Atlantic salmon**

The Oakfield Wind Project occurs within the range of the Gulf of Maine Distinct Population Segment of Atlantic salmon and within a watershed that is designated as critical habitat. During a June 11, 2009 site visit by Norm Dube, an Atlantic salmon biologist with the Maine Department of Marine Resources, it was determined that the unnamed tributary of Downing Brook (where a new stream crossing is proposed) provides suitable habitat for juvenile Atlantic salmon but not adults. A section of ledge outcroppings downstream of the proposed road crossing present a cascade that is impassable to juvenile Atlantic salmon. Because of the presence of a natural barrier to fish passage downstream of the proposed road crossing, this stream location does not contain critical habitat. Because Atlantic salmon are routinely stocked into the East Branch Mattawamkeag River (into which Downing Brook flows), it is possible that Atlantic salmon occur in the general project area. Downing Brook and its tributaries, however, have never been surveyed for the presence of salmon.

Since there is no critical habitat present at the proposed road crossing and a natural barrier prevents juvenile Atlantic salmon from reaching the project site, the Service would not expect any effects from the construction of the road crossing. Further, the Corps will require standard sediment and erosion control measures during all construction activities that could affect the stream. On October 9, 2009 LeeAnn Neal of your staff discussed potential effects of this project on Atlantic salmon and critical habitat with Wende Mahaney of my staff; we concurred with your determination that this project (in particular the proposed construction of a stream crossing) would have no effect on Atlantic salmon or critical habitat.

### **Summary**

Based on the information and recommendations above, the Service concurs with your determination that the Oakfield Wind Project may affect, but is unlikely to adversely affect the Canada lynx. The project would have no effect on Atlantic salmon or designated critical habitat. Accordingly, no further action is required under Section 7 of the ESA, unless: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

We plan to comment on the bald eagle and migratory bird surveys in a separate letter.

If you have any questions, please call Mark McCollough, endangered species biologist, at (207) 866-3344, Ext. 115.

Sincerely,

A handwritten signature in cursive script, appearing to read "Erin Williams".

Erin Williams for  
Lori Nordstrom, Project Leader  
Maine Field Office

cc: Steve Timpano, MDIFW

Jay Clement, USACOE



GOVERNOR  
John E. Baldacci



COMMISSIONER  
Roland D. Martin

Wildlife Division  
73 Cobb Road  
Enfield, ME 04493

March 15, 2010

Stantec Consulting  
Attn: Dale Knapp  
30 Park Drive  
Topsham, ME 04086

Dear Dale:

I have received your letter requesting Essential and Significant Habitat information for your project located in Island Falls and T4 R3 WELS.

**Essential Habitats:**

Essential Habitats are defined as “areas currently or historically providing physical or biological features essential to the conservation of an endangered or threatened species in Maine and which may require special management considerations”. Essential Habitat protection in Maine currently applies to roseate and least terns, and piping plover nest sites. Additional listed species may receive attention in the future.

According to MDIFW records, there are no Essential Habitats known to be associated with your project areas located in Island Falls and T4 R3 WELS.

**Significant Wildlife Habitats:**

The Natural Resources Protection Act (NRPA), administered by the Maine Department of Environmental Protection (DEP), provides protection to certain natural resources including Significant Wildlife Habitats. Significant Wildlife Habitats are defined by the NRPA as:

Habitat for state and federally listed endangered and threatened species.

High and moderate value deer wintering areas (DWAs) and travel corridors.

High and moderate value waterfowl and wading bird habitats (WWHs), including nesting and feeding areas.

Shorebird nesting, feeding, and staging areas.

Seabird nesting islands.

According to MDIFW records, there is a Waterfowl/Wadingbird Habitat associated with each of your project areas. Please refer to the enclosed maps.

Finally, MDIFW maintains a statewide database of endangered, threatened and special concern wildlife species and their habitats. These include endangered and threatened species not included under Essential Habitat and species that are of special concern to MDIFW but for which sufficient data may be currently lacking. The State Threatened brook floater has been surveyed in the East Branch of the Mattawamkeag River.

Sincerely,

*Mark A. Caron*

Mark A. Caron  
Regional Wildlife Biologist  
Phone: 207-732-4132  
Fax: 207-732-4405  
E-Mail: [mark.caron@maine.gov](mailto:mark.caron@maine.gov)