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Admitted in: KS, MA, ME, MO, NY

October 24, 2025

VIA MELS PORTAL

Ms. Dawn Hallowell
Maine Department of Environmental Protection
Bureau of Land Resources
17 State House Station
Augusta, ME 04333-0017

Re: Condition Compliance Submission for Condition #39 of Maine Department of Environmental Protection Site Location/NRPA Permit Numbers #L-27625-26-A-N, L- 27625-TG-B-N, L-27625-2C-C-N, L-27625-VP-D-N, L-27625-IW-E-N and for Condition #10 of the Maine Board of Environmental Protection Permit Numbers L-27625-26-F-Z, L-27625-TG-G-Z, L-27625-2C-H-Z, L-27625-VP-I-Z, L-27625-IW-J-Z, L-27625-26-AB-Z for the New England Clean Energy Connect Project

Dear Ms. Hallowell:

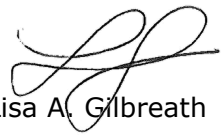
On behalf of NECEC Transmission LLC (NECEC LLC), please find enclosed the following materials:

- Clean revised Forest Management Plan (and all exhibits thereto), Attachment A
- Redline format Forest Management Plan (redline comparison of July 16, 2025 Forest Management Plan filing), Attachment B

As indicated in the Bureau of Parks and Lands' (BPL's) October 8, 2025 letter to the Department, since NECEC LLC filed the original Forest Management Plan on July 16, 2025, BPL has engaged in its standard practice of iterative review and discussion with landowner Weyerhaeuser. The attached redline format shows the revisions that were made during BPL's review and in response to its request for supplemental information from Weyerhaeuser. The attached clean revised Forest Management Plan, including all attachments thereto, is submitted to the Department for its review and approval pursuant to Condition #39.

Please let me know if you have any questions.

Sincerely,



Lisa A. Gilbreath

Enclosures
cc (via email): Service List (last updated 2025)

ATTACHMENT A
FOREST MANAGEMENT PLAN
(CLEAN)

Forest Management Plan

for the

New England Clean Energy Connect

Upper Kennebec Conservation Easement

October 2025

Plan Preparation:

Mark W. Rabon, LF3159
Ben Kamps, LF3796
Ed Meddaugh, Biometrician
Ray Ary, Biologist
October 2025

Weyerhaeuser

PO Box 646
Bingham, Maine 04920

Table of Contents

1.0 Introduction

This Forest Management Plan (FMP) dated July 14, 2025, governs land covered by the New England Clean Energy Connect (NECEC) Upper Kennebec Conservation Easement granted by Weyerhaeuser Company, a Washington corporation, with a place of business in Bingham, Maine (Grantor or Weyerhaeuser) to the State of Maine, acting by and through its Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands (Holder) on _____ and recorded in Book _____, Page _____ in the Somerset County Registry of Deeds (Conservation Easement). The land covered by the Conservation Easement (see **Appendix A**) and subject to this FMP is referred to as the "Protected Property".

On May 11, 2020, the Maine Department of Environmental Protection (MDEP) completed its 29-month application review and issued an Order approving the NECEC project Site Location of Development Act and Natural Resources Protection Act permit applications. Special Condition #39 of the MDEP Order requires the development of a Conservation Plan to permanently conserve 40,000 acres in the vicinity of NECEC project Segment 1 (Beattie Township to The Forks Plantation) to compensate for the fragmenting effect and the related edge effect of Segment 1 on habitat in the region by promoting habitat connectivity and conservation of mature forest areas. The required area to be conserved was increased to 50,000 acres by the Maine Board of Environmental Protection (Board) Order dated July 21, 2022, that affirmed the MDEP Order. Collectively, the MDEP Order and the Board Order are referred to herein as the "Permit Orders."

In compliance with the Permit Orders, NECEC Transmission LLC (NECEC LLC), along with Weyerhaeuser and the Holder, have developed the accompanying Conservation Plan, which conserves more than 50,000 acres of largely contiguous property adjacent to Segment 1 (the Protected Property), to be managed for mature forest and habitat connectivity, including wildlife travel corridors within riparian areas and between mature forest habitats.

The Conservation Plan must:

- Establish as its primary goal the compensation for the fragmenting effect of the transmission line on habitat in the region of Segment 1 and the related edge effect by promoting habitat connectivity and conservation of mature forest areas;
- Identify the area(s), with a focus on large habitat blocks, to be conserved and explain the conservation value of this land; any conservation area must be at least 5,000 acres unless the area is adjacent to existing conserved land or the applicant demonstrates that the conservation of any smaller block, based on its location and other characteristics, is uniquely appropriate to further the goals of the Conservation Plan;

- Include a draft Forest Management Plan establishing how, consistent with the primary goal of the Conservation Plan, the conservation area(s) will be managed, including to provide blocks of habitat for species preferring mature forest habitat and wildlife travel corridors along riparian areas and between mature forest habitat;
- Explain the legal interest, such as fee ownership or a working forest conservation `easement, that will be acquired in each area; the proposed owner or holder of this interest; and the qualifications of each proposed owner or Holder;
- Include preliminary consent from any proposed owner or Holder;
- Explain how the applicant will ensure the availability of stewardship funding (e.g., funding for monitoring and enforcement) needed to support achievement of the goals of the Conservation Plan; and
- Ensure the MDEP will have third party enforcement rights.

Pursuant to Section 3.3 of the Conservation Easement, Forest Management Activities, as defined in **Appendix B**, on the Protected Property, shall be conducted in accordance with this FMP. The primary goal of this FMP is compensation for the fragmenting effect of the NECEC on habitat in the vicinity of that transmission line and the related edge effect by promoting habitat connectivity and conservation of mature forest areas. This FMP establishes how, consistent with the primary goal of the Conservation Plan, the Protected Property will be managed, including providing blocks of habitat for species preferring mature forest habitat and wildlife travel corridors along riparian areas and between mature forest habitats. This will be accomplished by modifying existing silvicultural practices on the property to create a shifting mosaic from early successional through mature forest blocks, which increases overall mature forest habitat and provides habitat connectivity, and by establishing permanent wildlife travel corridors along riparian areas. Compared to current management practices, the proposed conservation management practices described herein are intended to result in an increase from 40% in the 35+ foot age class and 13% in the 50+ foot age class today, to 65% in the 35+ foot age class and 50% in the 50+ foot age class by approximately 2065.

2.0 Property description

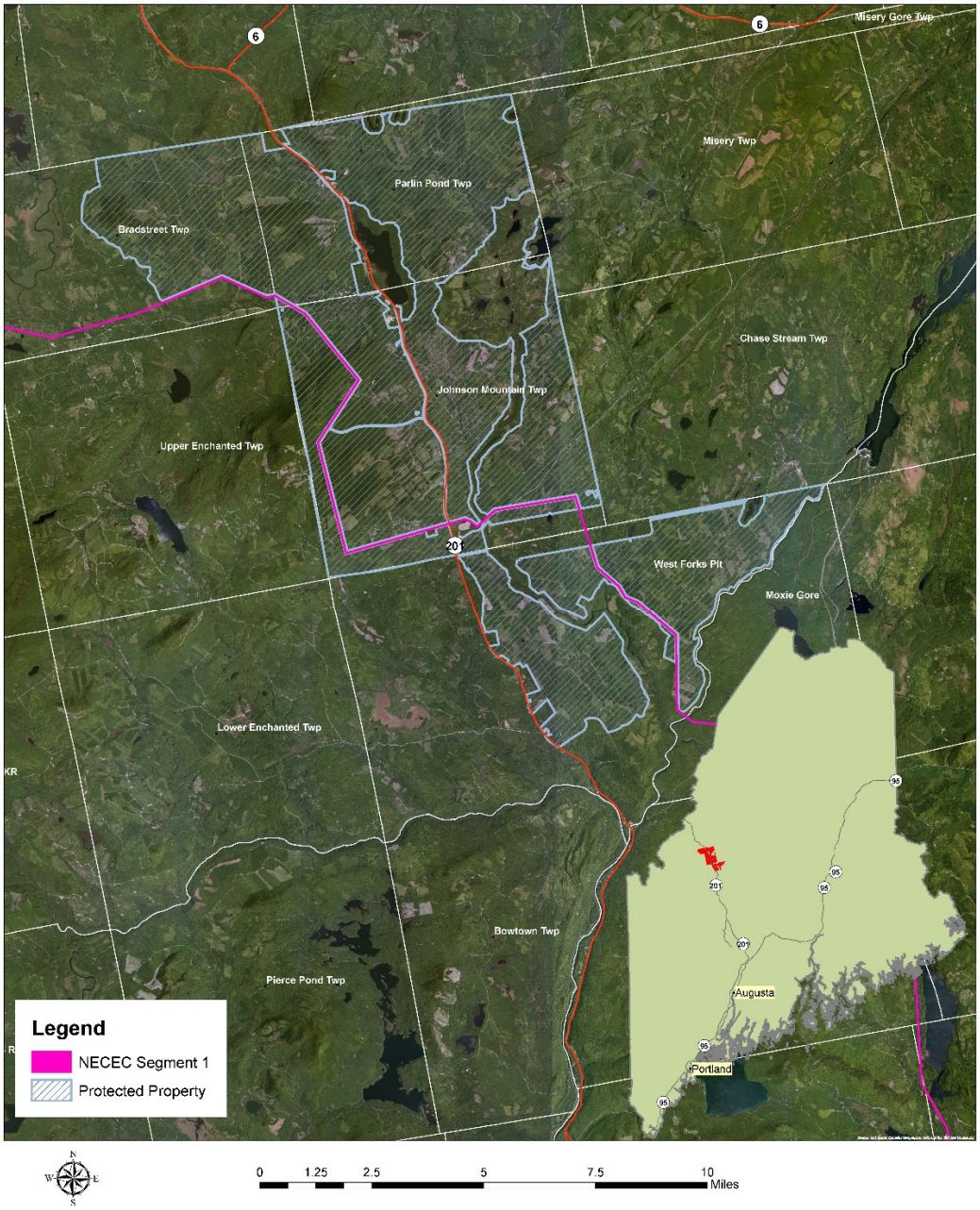
2.1 Location

The Protected Property, depicted in **Figure 1** and **Appendix C** consists of more than 50,000 acres of largely contiguous property adjacent to Segment 1 of the NECEC, an approximately 53.1-mile-long portion of the transmission line that starts at the Maine/Quebec border in Beattie Township and continues to The Forks Plantation. It is to be managed for mature forest and habitat connectivity, including wildlife travel corridors within riparian areas and between mature forest

habitats. The Protected Property is located in Bradstreet Township, Johnson Mountain Township, Parlin Pond Township, and West Forks Plantation.

Segment 1 of the NECEC bisects the Protected Property, ensuring that any fragmenting or edge effect caused by the transmission line during its operational life is mitigated by establishing the conservation measures described herein in the immediate vicinity of Segment 1 in perpetuity.

Figure 1. Map of the Protected Property.



2.2 Region

The Protected Property further enhances and extends a large landscape of protected land in the Upper Kennebec Region due to its adjacency to existing conservation lands. To the northwest is the Leuthold Forest Preserve (16,934-acres), Moose River/#5 Bog Conservation easement (4,790-acres), and the Attean Pond Conservation Easement (20,000 acres); the Cold Stream Public Land Unit (8,150-acres) extends north/south and runs through the Protected Property; and the Moosehead Conservation Easement (355,449-acres) lies to the east and north. The Protected Property fills a gap between these areas, creating almost 450,000 contiguous acres in conservation.

2.3 Ownership History

Weyerhaeuser, or its predecessor in interest, has owned the property since 1998. The property was conveyed to SDW Timber II, L.L.C. in 1998, via Quitclaim Deed without Covenant from S.D. Warren Company, which deeds are recorded at Book 2489, Page 228 (Bradstreet, T4 R7, BKP WKR), Book 2490, Page 81 (Johnson Mountain, T2 R6, BKP WKR), Book 2490, Page 228 (Parlin Pond, T3 R7, BKP WKR), and Book 2491, Page 67 (West Forks, T1 R5, BKP WKR). In December of 1998, SDW Timber II, L.L.C. changed its name to Plum Creek Maine Timberlands, L.L.C., as evidenced by document recorded at Book 2605, Page 151, Records of Somerset County. In September of 2016, Plum Creek Maine Timberlands, L.L.C. merged with and into Plum Creek Timberlands, L.P., and contemporaneously Plum Creek Timberlands, L.P., merged with and into Weyerhaeuser Company, as evidenced by Affidavit of Title recorded in the Records of Somerset County, Document 14552, Book 5097, Page 70.

2.4 Boundary Lines

A legal description, including a property map, will be developed by Weyerhaeuser and provided to Holder prior to implementation of the Conservation Plan. A boundary line survey of the Protected Property shall be completed within 24 months following the conveyance of the Conservation Easement in accordance with Paragraph II. A. *Words of Conveyance*.

The boundary line survey shall include marking features such as roads, rights-of-way, structures, and other improvements. The boundary line survey shall be recorded in accordance with the Conservation Easement, and Weyerhaeuser shall cause any boundary lines of the Protected Property not currently marked and painted to be marked and painted. Survey data will be uploaded to Weyerhaeuser's FMS System with a copy of the boundary shapefiles being shared with the Holder.

2.5 Property Tax Status, Zoning, and Legal Obligations

Table 1 below includes each Maine Land Use Planning Commission (LUPC) Account Parcel Number (APN), parcel location address, whether the parcel is enrolled in the Maine Tree Growth Program, and LUPC development subdistrict as established by Chapter 10 of LUPC's rules for the Protected Property. The Protected Property is subject to the LUPC's rules, as well as the Maine Forest Practices Act, 12 MRS §§ 8866 *et seq.*, as well as the Maine Forest Service's Chapter 20 Forest Regeneration & Clearcutting Standards. While title work is ongoing, to the best of Weyerhaeuser's knowledge the Protected Property is subject to no lease agreements, deed restrictions, covenants, or similar land use restrictions relating to forestry.

Table 1. Maine LUPC Account Parcels for the Protected Property				
APN	APN2	LocationAddress	CountyZoning	Enrolled in Maine Tree Growth?"
SO020011.15	25839011.15	Parlin Pond Twp, ME	P-RR	yes
SO014012	25829012	Johnson Mountain Twp, ME 04945	M-GN	yes
SOP05184	25330184	West Forks Plt, ME 04985	P-WL1	Very small tax parcel included in SOP05185 enrollment in tree growth
SOP05185	25330185	West Forks Plt, ME 04985	M-GN	yes
SO020015	25839015	Parlin Pond Twp, ME	M-GN	yes
SO022011	25813011	Bradstreet Twp, ME 04945		yes
SO014011.12	25829011.12	Johnson Mountain Twp, ME 04945	M-GN	yes
SOP05164	25330164	0 Dead Stream Rd, West Forks Plt, ME 04985	P-SL2	Yes, subject to a small access corridor to be removed in 2027
SO014011.1	25829011.1	Johnson Mountain Twp, ME 04945	M-GN	yes
SO014011.2	25829011.2	27 Owls Holw, Johnson Mountain Twp, ME 04985	M-GN	yes
SO020014	25839014	Parlin Pond Twp, ME 04945	P-WL3	yes
SO020011	25839011	Parlin Pond Twp, ME 04945	M-GN	yes
SOP05074	25330074	0 N Old 201 Rd, West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05074 WY does own is enrolled in tree growth, subject to a small access corridor to be removed in 2027
SOP050818	253300818	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP050818 WY does own is enrolled in tree growth
SOP05131	25330131	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05131 WY does own is

				WY does own is enrolled in tree growth
SOP05171	25330171	West Forks Plt, ME 04985	M-GN	yes
SOP05172	25330172	West Forks Plt, ME 04985	M-GN	yes
SOP05165	25330165	West Forks Plt, ME 04985	M-GN	yes
SOP05132	25330132	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05132 WY does own is enrolled in tree growth
SOP05142	25330142	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05142 WY does own is enrolled in tree growth
SOP05141	25330141	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05141 WY does own is enrolled in tree growth
SOP050917	253300917	3681 US Route 201, West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP050917 WY does own is enrolled in tree growth

3.0 General Condition of the Forest

3.1 Forest Description

The Protected Property is a forested land area of significant breadth and diversity, with outstanding values including sizeable blocks of mature forest habitat. Mature Forest Habitat is defined as forest stands consisting of a mix of native species with a minimum basal area of 80 square feet per acre of live trees at least 4.5 inches in diameter at breast height, including a minimum basal area of 60 square feet per acre of live trees at least 50 feet tall, accompanied by the presence of representative levels of well distributed standing dead and downed trees, as described in Section VII.A.6 of the Conservation Easement. It is interspersed with upland, riparian, and wetland vegetative communities composed of coniferous, deciduous, and mixed-wood forest of varied age classes with approximately 40% of the area currently 35 feet in height or taller. Large blocks of the property have ecological importance as wildlife and fisheries habitat, including for species that prefer mature forest such as pine marten and white-tailed deer as well as brook trout, landlocked salmon, other fish, and many species of forest interior dwelling birds, waterfowl, reptiles, and amphibians. The Protected Property includes extensive bogs, wetlands, rivers, an abundance of seasonal and perennial streams, lakes, remote ponds and other water bodies, and unique natural features, all of which will benefit from the overall conservation of the Protected Property. The intensive conservation management described in the FMP would protect, maintain, and enhance the habitat value for these species.

The forests consist of approximately 17% hardwood stands, 40% mixed-wood stands, and 43% softwood stands, which are of varied age classes and species. Stands with trees under 35 feet in height comprise 60% of the acreage with only 13% currently taller than 50 feet.

3.2 Forest Health

The Protected Property is managed by professional foresters and biologists, in accordance with state law, utilizing forest management practices that include scientifically sound silviculture and best management practices. Foresters are responsible for field review of potential local forest health problems and concerns as they conduct their normal field duties and report observations to Supervisors who contact appropriate agencies as needed. Regular training is conducted by agencies such as the Maine Forest Service regarding the detection and recognition process for emerging forest health concerns such as Emerald Ash Borer, Hemlock Wooly Adelgid, Beech Leaf Disease, and Spruce Budworm.

Spruce budworm is a significant emerging threat to the health of balsam fir on the Protected Property. The current state-wide spruce budworm mitigation strategy includes insect monitoring and hotspot identification through extensive L2 surveys, forest inventory analyses and risk

assessments, and active engagement with the Maine Spruce Budworm (SBW) Task Force on targeted management strategies.

As needed, quarantine associated agreements and any required compliance records are kept on hand and foresters assist contractors to ensure that forest product and equipment movement off-site is in compliance.

3.3 Fire Protection

To protect timber resources, fire hazard reduction is employed broadly, and fire suppression is practiced in wildfire events. Contact with various state agencies with an emphasis on Maine Forest Service is used to ensure coordinated fire responses, such as meetings with state fire control officials in advance of an upcoming fire season to review high hazard areas.

All professional foresters, contract loggers, haulers, and road crews working on the land have fire suppression systems and are trained in their use.

The public is prohibited from building outdoor fires in fire hazard areas during periods of fire emergency and can only have fires in designated pre-approved areas. Insect infestation control and quarantine efforts can also reduce vulnerability to fire events. Healthy forest conditions are fostered through timely and careful harvests carried out by trained loggers under the supervision of professional foresters.

3.4 Hydrology

The Protected Property includes extensive bogs, wetlands, rivers, an abundance of seasonal and perennial streams, lakes, remote ponds and other water bodies, and unique natural features, all of which will benefit from the overall conservation of the Protected Property.

The Protected Property is located entirely within the upper Kennebec River watershed area - See Watershed Map in **Appendix D**. Significant streams running through the Protected Property include Bean Brook, Parlin, and Cold Streams. In total, the Protected Property includes approximately 88 miles of rivers and perennial streams, representing an extensive network of riparian corridors within the lands to be conserved. As outlined further in Section 4.2.3, two levels of buffers will be established along riparian corridors on the Protected Property: “No-Harvest Buffers” and “Mature Forest Habitat Buffers”. These Perennial Stream Buffers run from the Normal High-Water Line on the approximately 88 miles of Perennial Streams. For Riparian Wetlands, the Normal High-Water Line where the buffer begins is the upland edge of the wetland, not the edge of the open water within the stream corridor. These buffers will improve and maintain habitat

connectivity by creating Mature Forest Habitat running along Perennial Streams that will allow for increased connectivity to Mature Forest Habitat elsewhere on the Protected Property.

3.5 Topography and Soils

The topography and soils on the Protected Property are typical of forested, post-glaciated landforms. Several mountains that are part of the larger Boundary Mtn complex that runs along the border between Quebec & Canada are contained within the Protected Property. These peaks include Johnson Mtn, Bean Brook Mtn, and Catheart Mtn. Some areas of exposed bedrock are present on these slopes and scattered throughout the Protected Property.

The parent soil within the Protected Property is largely glacial derived and composed of glacial till, sandy outwash, and several prominent gravel esker features. Natural Resources Conservation Service (NRCS) information indicates a diverse soil distribution across the Protected Property with approximately fifty unique soil types as listed and mapped in the Appendix D – Soil Maps and Map Unit Details. The three largest soil types by area contained within the Protected Property are shown below:

DEC—Danforth-Elliottsville association, 3 to 15 percent slopes, extremely stony covering approximately 13% of Protected Property (NRCS).

CPB—Colonel-Pillsbury-Peru association, 0 to 8 percent slopes, very stony covering approximately 8% of the Protected Property (NRCS).

LTC—Hogback-Rawsonville complex, 4 to 25 percent slopes covering approximately 7% of the Protected Property (NRCS).

Complete soils information can be found in **Appendix E**.

4.0 Permit Order Compliance and Conservation Plan

Consistent with the primary goal of the Conservation Plan, this FMP governs how the Protected Property will be managed to increase and maintain habitat connectivity, establish Perennial Stream Buffers, promote and maintain mature Forest Stands, and achieve Mature Forest Habitat. This will, over time, provide significantly more and larger blocks of habitat for species preferring mature forest conditions and will improve, maintain, and create additional wildlife travel corridors along riparian areas and between Mature Forest Habitats that would not otherwise be present on the Protected Property.

4.1 Conservation of Mature Forest Areas

The Protected Property will be permanently managed to achieve and maintain a minimum of 50% of the Productive Forest as Mature Forest Habitat after approximately 2065. While the MDEP[1] and the Board[2] Permit Orders found that mature forest begins to provide benefits to species preferring Mature Forest Habitat when those forest stands reach 35 feet in height, in concurrence with the Holder and the Maine Department of Inland Fisheries & Wildlife, and as agreed upon to meet the terms of the Permit Orders, this FMP achieves a significantly greater height and basal area to the benefit of species preferring Mature Forest Habitat and travel corridors. Under this FMP, Forest Stands reach the condition of Mature Forest Habitat when a minimum basal area threshold of 80 square feet per acre of live trees with 60 square feet of 50' tall or taller trees is reached. This target level threshold will be then maintained in perpetuity utilizing Shifting Mosaic Forest management practices that promotes a dynamic landscape characterized by a diversity of growth stages, age classes, and species composition. Currently in 2025, the Productive Forest area that meets the Mature Forest Habitat definition on the Protected Property is approximately 13%, at just over 6,000 acres.

As shown in **Figure 2**, under this FMP, over the next forty years the percentage of trees over 50 feet in height is intended to increase from approximately 13% today to 50% by approximately 2065. To ensure this target is met, mature forest conditions will be monitored and managed by targeting particular milestones which will be reviewed as part of each annual meeting between Grantor and Holder. The target goal of 50% of productive acres in mature forest by 2065 will then be sustained in perpetuity.

Climate change effects may affect the growth models used as a basis for the Mature Forest Habitat projections outlined in this FMP, including the anticipated ten-year milestones. Climate

[1] MDEP Order at 79: "Since the hearing, the Department has continued its review of the evidence in the record and identified additional areas where taller vegetation, with a minimum height of 35 feet, is appropriate to support wildlife…."
[2] Board Order at 53: "While vegetation with a minimum height of 35 feet is not equivalent to full canopy height vegetation in terms of the cover it provides, the record evidence supports that vegetation of 30 feet and taller aids wildlife movement."

change increases uncertainty about future forest conditions, which cannot be predicted by current growth models. A changing climate will likely affect tree growth rates, mortality, disturbance patterns and the distribution of tree species after disturbances. Models suggest shifts in the ranges of trees and other plants, animals, and pests. More frequent extreme wildfires and weather events are expected to alter disturbance regimes and will require adjustments in forest operations and planning. Management strategies to address these uncertainties must change over time, guided by the best available science.

Figure 2. Mature Forest Milestones - Estimated Mature Habitat at each 10-year increment on Productive Acres

Mature Forest Milestones	
2025	13%
2035	20%
2045	30%
2055	40%
2065	50%

This represents a significant increase compared to current conditions, as well as to the projected forest conditions in 2065 under management practices that follow only the minimum state standards or, alternatively, if the property were developed. A visual depiction of current forest heights by age class is included as **Figure 3**, and a visual depiction of forest heights by age class anticipated in 2065 and beyond under the FMP is included as **Figure 4**. Note that the 2025 Mature Forest Milestone acreage at 13% is derived exclusively from the ≥50 Height Group as depicted in Figure 3.

Figure 3. 2025 Forest Heights by Age Class Under Current Management

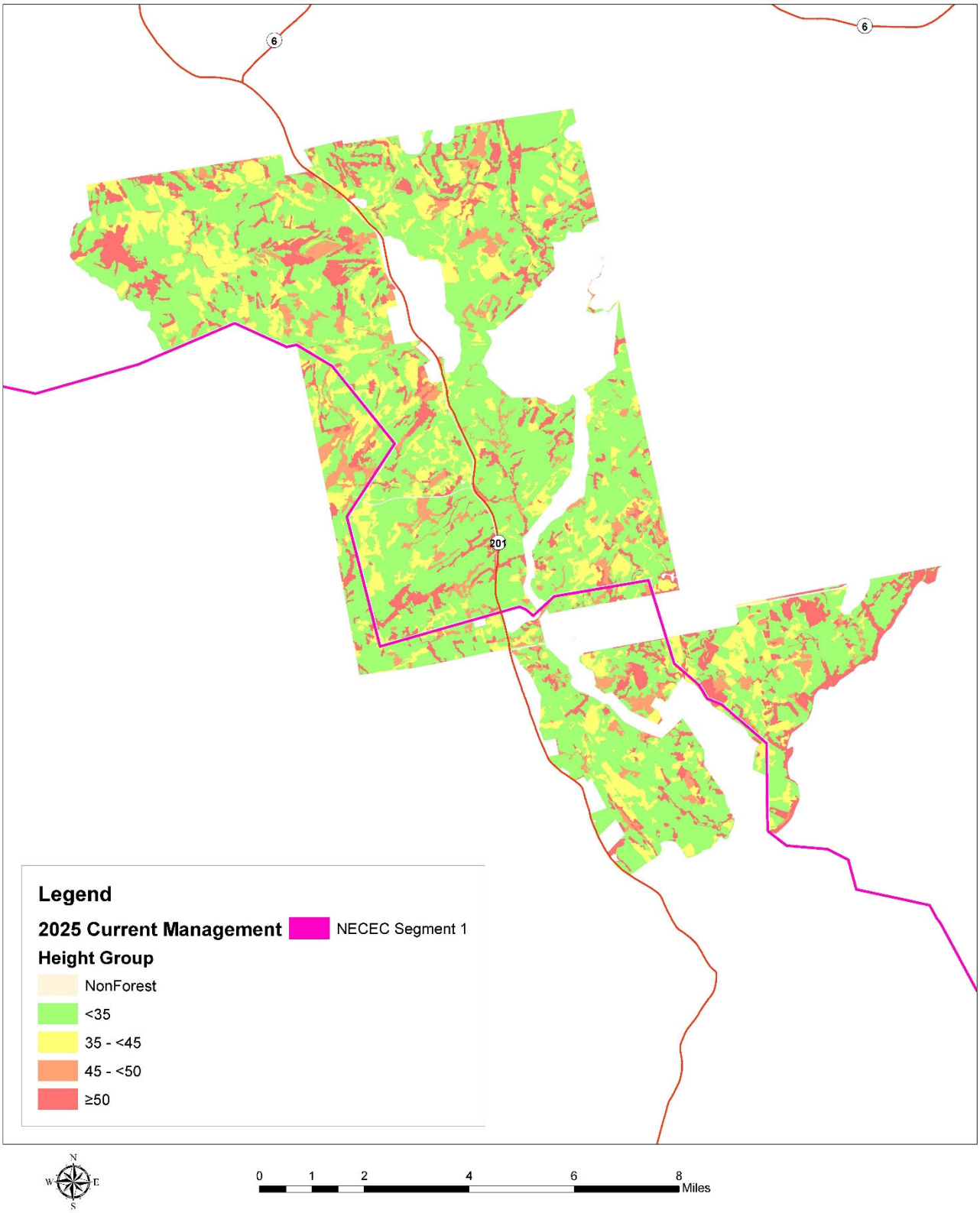
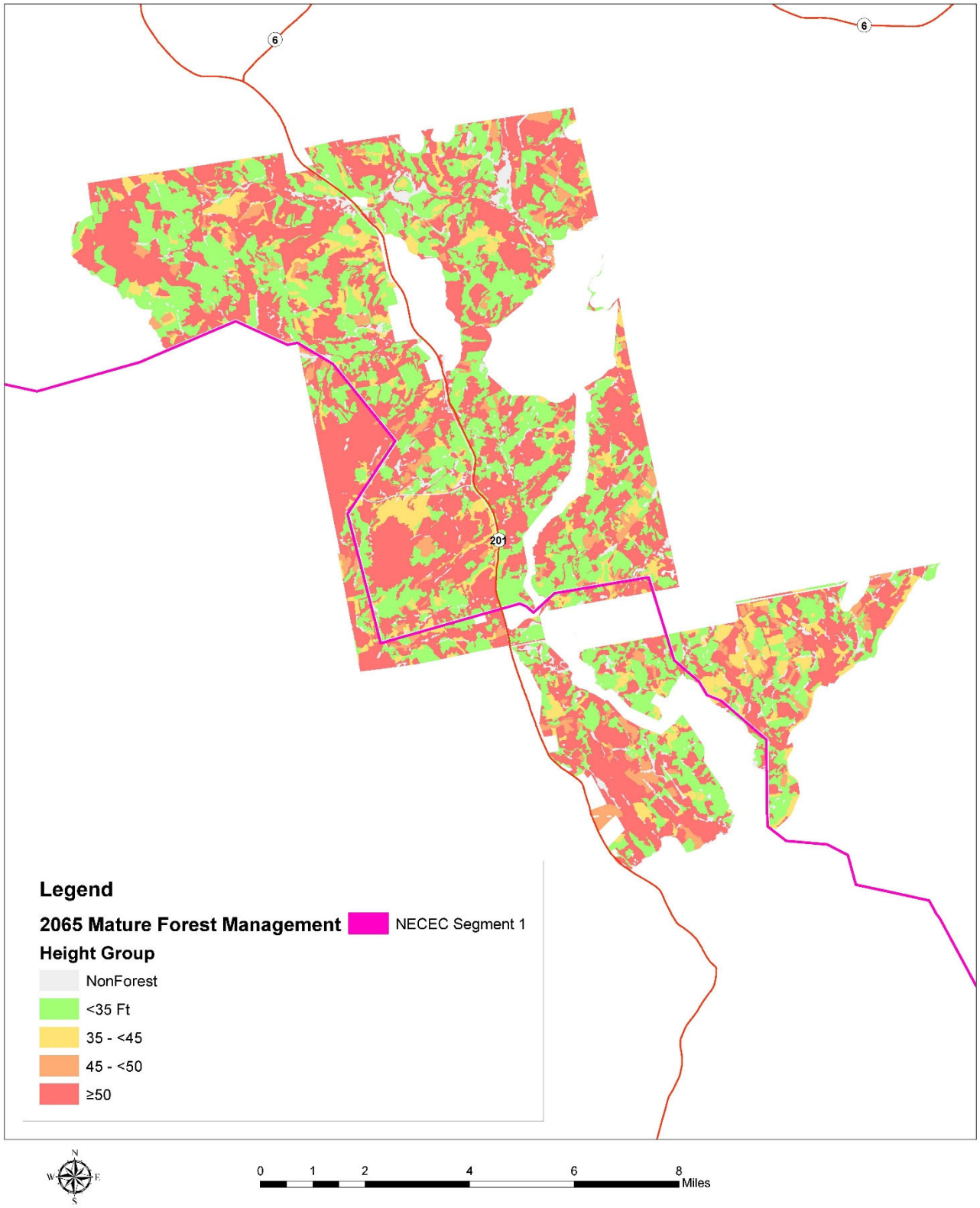


Figure 4. Anticipated 2065 Forest Heights by Age Class Under Proposed Management



4.2 Harvest Planning, Mature Forest Measurement, and Road Construction Approach

Ongoing harvests, including those in mature stands, are planned throughout the interim period leading up to 2065. The Forest Management Plan is structured to ensure that by 2065, at least 50% of the productive forestland will reach mature forest condition, and that all interim milestones will be met.

As stated in Section 5.3, the Protected Property will be harvest scheduled at a minimum of every 10 years with Woodstock using the newest inventory available, or more frequently as needed to account for significant storms, forest health events, or other impacts to the Mature Forest Habitat. The model will be run to ensure the mature milestones are met, and measurements will be taken to confirm milestones are reached. Harvest activities are scheduled and implemented in accordance with the milestones outlined in Section 5.3, with progress tracked at regular intervals (see Table: Mature Forest Milestones). The one-year and ten-year planning maps are shown below.

One and 10-12 Year Potential Harvest Areas

The maps below display the current modeled potential harvest areas for the Protected Property for 2026 in **Figure 5**, and over the next 10-to-12-year timeframe in **Figure 6** (both are for planning purposes only and are subject to change). Also shown are the increased perennial buffers along with the approximate scheduled harvest period. No harvesting activity is planned within the No-Harvest Buffer. Within the Mature Forest Buffer, approximately 50 acres of thinning treatments are planned annually from 2026 through 2036. Such treatments will not delay development of Mature Forest Habitat within such buffers.

Figure 5. Current Targeted Harvest Areas for 2026

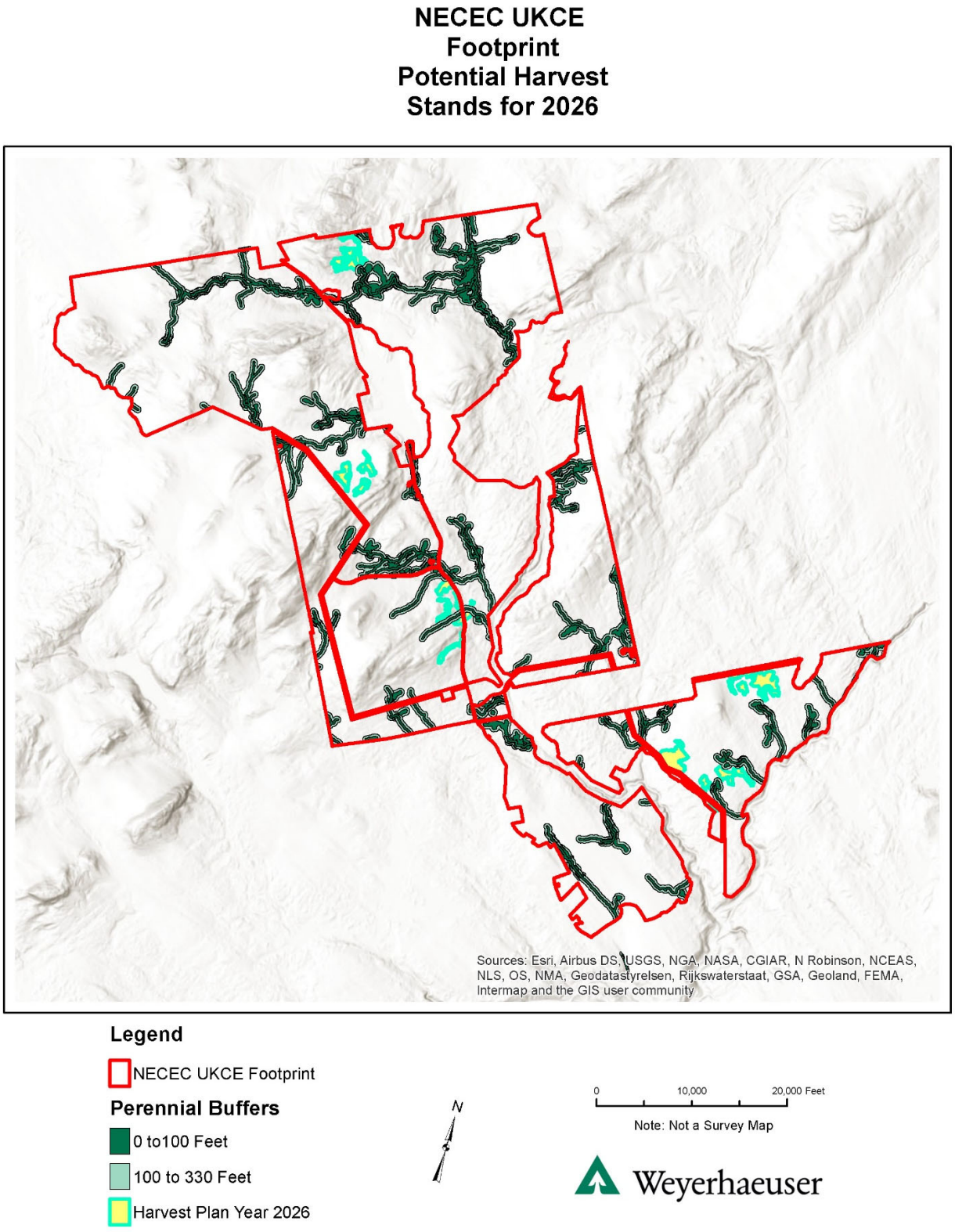
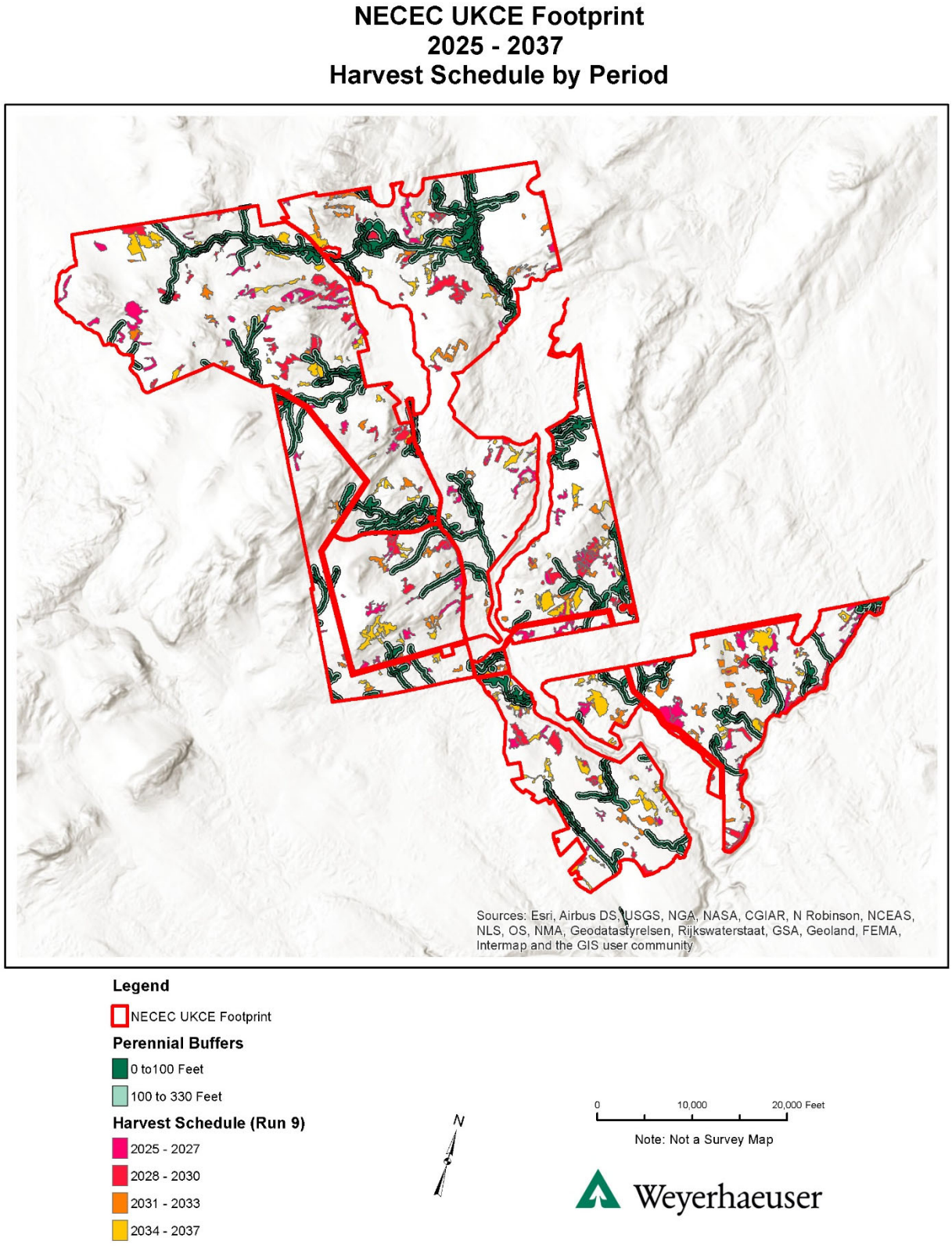


Figure 6. 10-12 Year Potential Harvest Areas for the Protected Property



Due to the format of the existing forest inventory data, the current measurement of the mature forest class includes all stands within the 45 to 55-foot majority height strata. This methodology is consistent with the stratification and stand-level estimation procedures described in Section 5.1.

Weyerhaeuser intends to conduct a comprehensive remeasurement of mature forest acreage by the end of 2026. The updated inventory will enable more precise classification of mature forest stands and will inform any necessary revisions to harvest plans to ensure attainment of the first milestone of 20% mature forest by 2035.

Harvest and Road planning on the Protected Property are guided by the principles of shifting mosaic forest management. This approach maintains a dynamic landscape characterized by a diversity of growth stages, age classes, and species composition, thereby promoting habitat connectivity and the development of mature forest blocks. Harvest schedules are developed using stand-level inventory data, remote sensing (LIDAR), and growth models (see Sections 5.3 and 5.4). Even-aged and select harvest regimes are implemented to meet mature forest milestones, with thinning and regeneration practices tailored to site conditions and CE requirements. Harvests are planned to maintain or enhance mature forest habitat, particularly within designated buffers and riparian corridors (see Section 4.3.3).

Road construction and maintenance are conducted in accordance with CE requirements and Best Management Practices (BMPs) to minimize soil erosion, protect water quality, and maintain habitat connectivity (see Section 5.6; Appendix G: BMP Standards). The establishment of new roads or relocation of existing roads requires prior written approval from the Holder, and all activities are supervised by licensed professional foresters. Existing roads within mature buffers are maintained but not expanded without approval, ensuring compliance with CE standards.

All harvest and road planning activities are conducted to meet the requirements outlined in the Conservation Easement, ensuring the perpetual conservation of mature forest habitat and habitat connectivity.

4.3 Habitat Connectivity

4.3.1 Adjacent Conservation Lands

The Protected Property provides and enhances extensive connectivity to adjacent conservation lands including the 16,934-acre Leuthold Forest Preserve, the 4,790-acre Number Five Bog Conservation Easement, and the 20,000 acre Attean Pond Conservation Easement to the northwest; the 8,150-acre Cold Stream Public Land Unit that lies within the Protected Property running north/south; and the 355,449-acre Moosehead Region Conservation Easement located to

the east and north of the Protected Property which also ties into other conservation areas in the region.

4.3.2 Habitat Connectivity Between Mature Forest Areas

This FMP increases the prevalence of Mature Forest Habitat blocks, which enables greater habitat connectivity within and between mature forest areas. To further illustrate the transition to mature forest, by approximately 2065 the expected acreage contained in stands greater than 200 acres having a height class greater than 35 feet would increase from approximately 16,700 acres under the current management regime to approximately 28,400 acres under the FMP. Similarly, the expected acreage in stands larger than 200-acres with a culminative height class greater than 50-feet would increase from approximately 7,750 acres under the current management regime to approximately 18,600 acres. The exact acreages of forest blocks in these height classes will vary over time.

4.3.3 Riparian Corridors/Buffers

Two levels of buffers will be established along riparian corridors on the Protected Property: "No-Harvest Buffers" and "Mature Forest Habitat Buffers" as defined below. These Perennial Stream Buffers run from the Normal High-Water Line on the approximately 88 miles of Perennial Streams. For Riparian Wetlands, the Normal High-Water Line - marking the start of the buffer - is defined as the upland edge of the wetland, rather than the edge of the open water within the stream corridor. These buffers are designed to maintain and enhance habitat connectivity by creating Mature Forest Habitat along Perennial Streams thereby enhancing connectivity to Mature Forest Habitat elsewhere on the Protected Property.

The map of Perennial Streams found in the Baseline Documentation Report will be used to identify the Perennial Streams that fall under the requirements of this section, subject to a total buffer area acreage cap of 6,898 acres. This acreage cap represents the maximum acreage subject to riparian buffer management across the Protected Property. This cap was derived from the spatial analysis conducted during plan development. The purpose of the cap was to provide management certainty recognizing that the Baseline Documentation would not be complete until after FMP development and to avoid acreage discrepancies as streams meander over time. The Perennial Stream buffers that make up this cap area are structured into two zones. Those buffer zones along with the estimated acreage distribution of each will be managed as follows:

- **No-Harvest Buffer** (0 - 100 feet above Normal High-Water Line) – Approx. 2,400 acres
- **Mature Forest Buffer** (100 - 330 feet above the Normal High-Water Line) – Approximately 4,500 acres. Harvesting may occur so long as the stand will continue to meet the Mature Forest Habitat threshold after harvest. See CE Section VII.A.6 regarding the establishment of Mature Forest Buffers.

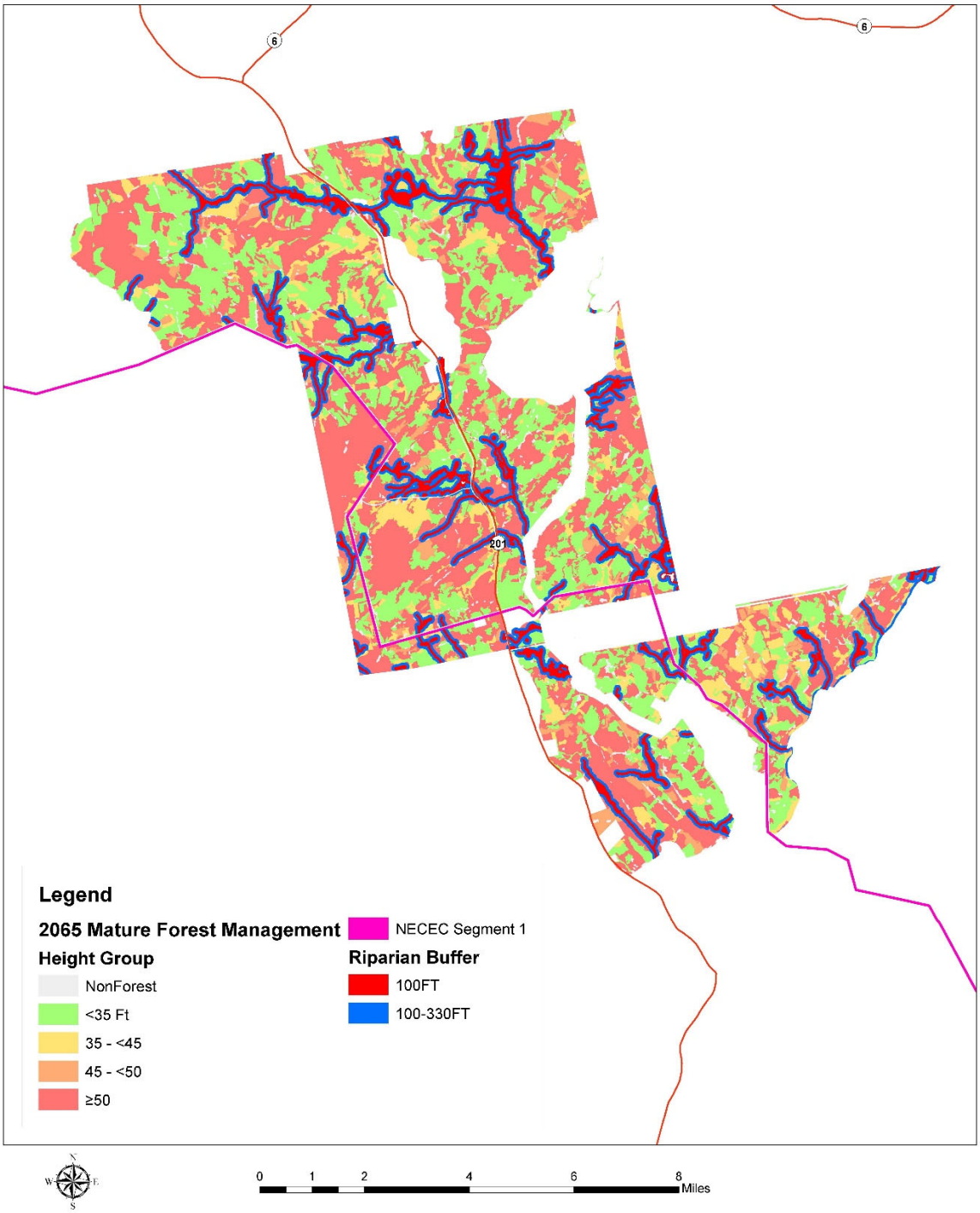
Table 2 below provides a more detailed breakdown of acreage by Covertype within the No-Harvest Buffer, the Mature Forest Buffer and the remaining acreage of the Protected Property.

Table 2. Covertype Acreage within and outside of Buffer Zones

Productive	CoverType		100-330FT	100FT	Grand Total
No	NP - Gravel Pit	39	17	1	57
	NP - Large Streams			56	56
	NP - Ledge	15			15
	NP - Open Water, Reservoirs, L	20		52	72
	NP - Swamps, Marshes, Bays	240	12	905	1,157
	NP - Utility ROWs	1			1
	NP - Yards (Internal Woodyards)	827	100	21	948
No Total		**1,142**	**128**	**1,036**	**2,306**
Yes	Aspen	176	21	5	202
	Conifer - Hardwood	7,591	1,090	617	9,298
	Hardwood	7,053	479	233	7,766
	Hardwood - Conifer	8,756	816	453	10,025
	Hardwood Plantation	16			16
	Larch Plantation	221	5	1	227
	Northern Hardwoods	414	2	1	417
	Pine Plantation	1,093	34	6	1,133
	Softwood	13,284	1,871	1,037	16,191
	Spruce Plantation	2,291	126	27	2,444
	Swamp Conifer - not Pine	5	11	9	26
	Tamarack Plantation	10			10
Yes Total		**40,911**	**4,454**	**2,389**	**47,754**
Grand Total		**42,052**	**4,583**	**3,425**	**50,060**

A map of the approximate location of riparian corridors, with forest management overlay, is included below as **Figure 7**.

Figure 7. Approximate location of riparian corridors, with forest height overlay.



Harvesting will not be conducted within the No-Harvest Buffer except as approved for forest health reasons, as addressed in the conservation easement in Section VII.A.6. Land Use in Accordance with a Forest Management Plan, Best Management Practices and Applicable Laws and

Regulations. Harvesting activities can occur in stands within the Mature Forest Habitat Buffers, subject to the conditions set forth in Section 4.4.

Harvesting equipment crossings of any Perennial Streams will be prohibited except for the construction of a road or skid trail needed to facilitate Forest Management Activities. In these instances, crossings and trails will be minimized and, except during frozen conditions, will utilize panel and/or other crossing structures that span from bank to bank to protect streambank and stream bed integrity.

4.4 Allowances/Exemptions/Approvals

This section covers activities that are exempted from the restrictions of this FMP either automatically or with approval from the Holder. In the event approval is required, Weyerhaeuser will provide written notice to the Holder. The Holder will have 30 days to review and respond. In the event of a denial by the Holder to move forward with such activities, the response from the Holder should include an explanation of the deficiency. In the event a written response is not received within 30 days, Weyerhaeuser is authorized to move forward as planned. See Section XII. F. Standard for Holder Granting Discretionary Consent and Providing Prior Written Approval in the Conservation Easement.

4.4.1 Mature Forest Buffer Harvest

Harvesting may occur in stands located within the Mature Forest Buffer as follows: If a stand has met the Mature Forest Habitat threshold, harvesting may occur without prior approval only if the stand will continue to meet the Mature Forest Habitat threshold after harvest. See CE Section VII.A.6 regarding the establishment of Mature Forest Buffers.

Pre-Salvage in No-Harvest Buffers

Other than in the context of crossings described in Section 4.4.4, harvesting within No-Harvest Buffers may only be conducted under specific forest health scenarios, including pre-salvage operations in response to spruce budworm infestation, and requires the following:

- Written approval from the Holder.
- Justification based on forest health risk, such as imminent mortality in balsam fir stands.

This provision is designed to allow targeted intervention where forest health threats may compromise long-term habitat objectives, while maintaining oversight and alignment with conservation goals.

Pre-Salvage Spruce Budworm Risk Analysis Within No-Harvest Buffers

The table below shows the mature spruce/fir softwood stands currently contained within the "No-Harvest Buffers". These stands may be vulnerable to spruce budworm where pre-salvage may need to be considered.

Table 3. Mature Spruce-Fir Softwood Stands within No-Harvest Buffers

CoverType	StandClassCode	100FT NoHarvest
Softwood	FS2B	11
	FS2C	20
	FS2D	2
	FS3A	22
	FS3B	36
	FS3D	6
	FS4D	4
	S1B	0
	S1C	20
	S1D	12
	S1E	2
	S2A	1
	S2B	235
	S2C	88
	S2D	7
	S3A	229
	S3B	125
	S3C	45
	S3D	37
	S3E	1
	S4A	126
	S4C	7
Softwood Total		**1,037**

Accounting for Pre-Salvage and Mature Forest Targets

All harvesting activities, including pre-salvage, are tracked through the Forest Management System (FMS) and incorporated into annual inventory updates. Specifically:

- Harvested stands are reclassified based on post-harvest conditions.
- Mature forest percentages are recalculated annually using updated stand-level data.

- If pre-salvage activities result in a reduction of mature forest acreage, compensatory adjustments (e.g., deferred harvests elsewhere) may be implemented to maintain progress toward the 2065 milestone of 50% mature forest coverage.

4.4.2 Forest Health

Upon written approval from the Holder, harvesting may be conducted within No-Harvest Buffers following the process described in 4.4.1, above. Section 4.4.3 below addresses responding to large-scale forest health threats and impacts.

4.4.3 Disaster / Force Majeure Event

Section VII.A.6 of the Conservation Easement states the following:

> Grantor and the Holder agree that in the event that a hurricane, fire, flood, drought, disease, or forest health pest outbreak causes or substantially contributes to the failure of Grantor to meet the Milestones or Mature Forest Goal ("Force Majeure Event"), then Grantor shall not be found in non-compliance with this Conservation Easement. Following such an event, the Grantor and Holder shall work cooperatively to revise the Forest Management Plan in furtherance of the Conservation Values of this Conservation Easement, which may include deferring further harvests until the Mature Forest Goals are met. Any further harvesting shall require prior written approval of the Holder and give priority to restoring progress towards the Milestones and the Mature Forest Goal.

Section VII.E.1(a) of the Conservation Easement states the following:

> Waiver in Specific Circumstances. Grantor and the Holder agree that in the event of a hurricane, fire, flood, drought, or similar event or if an insect, disease, or forest health pest outbreak occurs and sanitation or salvage harvests are necessary to prevent the outbreak from spreading to adjacent stands then the restrictions in this Section VII.E.1 may be temporarily waived with the prior written approval of the Holder.

If a Force Majeure Event has occurred, Weyerhaeuser will evaluate the need for revisions to the FMP, in cooperation with the Holder, and evaluate deferrals of further harvests until the Mature Forest Goals are met. See CE Section VII.A.6. Any incidence of a Force Majeure Event, including its impacts, scope, and potential long-term management, harvesting, reforestation, and other implications, will be discussed at the upcoming annual meeting.

4.4.4 Other Exceptions

Maintenance and use of established bridges, trails, truck roads, skid trails, landings, and other stream-adjacent infrastructure identified in the Baseline Documentation Report or otherwise

constructed in accordance with the Conservation Easement shall be exempt from the Perennial Stream Buffer requirements. Skid trails within the 100 ft. buffer are also exempt in order to facilitate Forest Management Activities provided no reasonable access alternative and provided all applicable BMPs are met. See Section 5.6 for further details regarding road, landings and skid trail maintenance and appropriate references to relevant CE Sections and Baseline Documentation. Maps in **Appendix F** show existing forest management roads and landings on the Protected Property.

New Perennial Stream crossings for roads can only be constructed if they have been described in the previous year's Annual Report or the Grantor has otherwise provided notification to the Holder and received approval from the Holder. For skid trail crossings of Perennial Streams, all planned locations and actual completed crossings from the previous year will be provided to the Holder at the Annual Meeting as outlined in CE Section VII.A.6. For both road and skid trail crossings, all applicable Best Management Practices, including those set forth in **Appendix G** and CE Section VII.A.6, shall be met. Such BMPs include, among other things, elements designed to protect streambank integrity by first minimizing the number of crossings and then selecting the most appropriate crossing locations. After the location of a crossing is determined, a successful crossing must also put plans in place for protecting streambank integrity, maintaining adequate filter strips, stabilizing exposed soils and utilizing adequate sediment barriers to minimize impact from exposed soils.

The Holder may grant approval for crossings of Perennial Streams to facilitate activities other than Forest Management Activities, such as non-intensive outdoor recreational activities.

5.0 Timber Resource Planning Considerations

5.1 Forest Inventory

Across the entire Protected Property, the forest inventory is comprised of two-stage stand level survey where individual stands are sampled to develop stand level estimates. A detailed description of Forest Inventory Procedure and Design is found in **Appendix H**. These stand level estimates are expanded to unsampled stands through a stratification and two-stage estimate procedure using remote sensed LIDAR and high flight imagery. The un-cruised stands' harvest history, covertype, and silviculture history are used in conjunction with the remote sensed data to assign an inventory to un-cruised stands.

The inventory is stored at the stand level. The stand consists of a homogenous covertype, stand class, land use, vegetative class, silviculture history, harvest history, and/or site class. Inventory is

adjusted for completed harvest in the Weyerhaeuser Forest Management System (FMS) within 30 days of the completed activity. Final harvests are totally depleted and assigned a reforestation activity. Partial harvest stands are assigned a modeled harvest inventory until the next inventory cycle.

The stand level inventory consists of tree lists with species, product, diameter breast height (dbh) class, basal area, merch height, total height, and trees per acre detail. Each stand will have the gross, productive, and harvestable acres assigned to the stand. Productive acres are determined based on the definition of "Productive Forest Acres" in the Conservation Easement, i.e., any area capable of growing a crop of trees that can reach Mature Forest conditions. See CE Section III.X. Productive areas exclude non-forested acres, such as roads, that intersect the stand. Harvestable acres are a subset of productive acres—they only include the productive acres that can be modeled for harvest, i.e., by excluding any restricted acres for special sites, steep slopes, and/or protected species.

The inventory cycle ensures that cruised stand estimates will be no older than 15 years. This will ensure that any variance in growth and yield estimates that vary from observed estimates are corrected through time. All partially harvested stands will have new sampled estimates assigned prior to any harvest scheduling and/or 10-year FMP update.

The current forest inventory projections are based on a combination of previously sampled stand-level data collected and remote sensing analysis, including 2016 LIDAR canopy height models and NAIP imagery. These inputs were used to stratify and expand estimates across unsampled stands using a two-stage estimation procedure as previously described.

The most recent full inventory effort was conducted in 2019. The current projections reflect updates derived from that dataset, adjusted for harvest activity, growth, post-harvest strata estimates, and young stand strata estimates.

As noted in Section 4.2, a comprehensive remeasurement of the Protected Property will occur by the end of 2026. This effort will focus on updating the entire inventory of the protected property through cruising individual stands in a strata. These individual stand level estimates will be expanded to uncruised stands with the assigned strata based on LIDAR height statistics, past history, and species detail cruising individual stands in a strata. These individual stand-level estimates will be expanded to uncruised stands with the assigned strata based on LIDAR height statistics, past history, and species detail.

The reinventory will follow field sampling procedures as described in **Appendix H**.

5.2 Inventory Classification System

Each stand has a covertype and stand class assigned to describe the current management, species composition, and the size density class. These classifications are derived from silviculture and harvest history, stand visits/exams, and the inventory.

5.2.1 Covertypes

The covertype of each stand identifies the association of tree species for productive stand types and the vegetative type or land use for nonproductive types. Stands with a "plantation" designation identify types that were artificially regenerated via intentional planting methods. See CE Section III.V. The table (**Table 4**) and map (**Figure 8**) below show the covertype acreage.

Table 4. Covertype Acreage

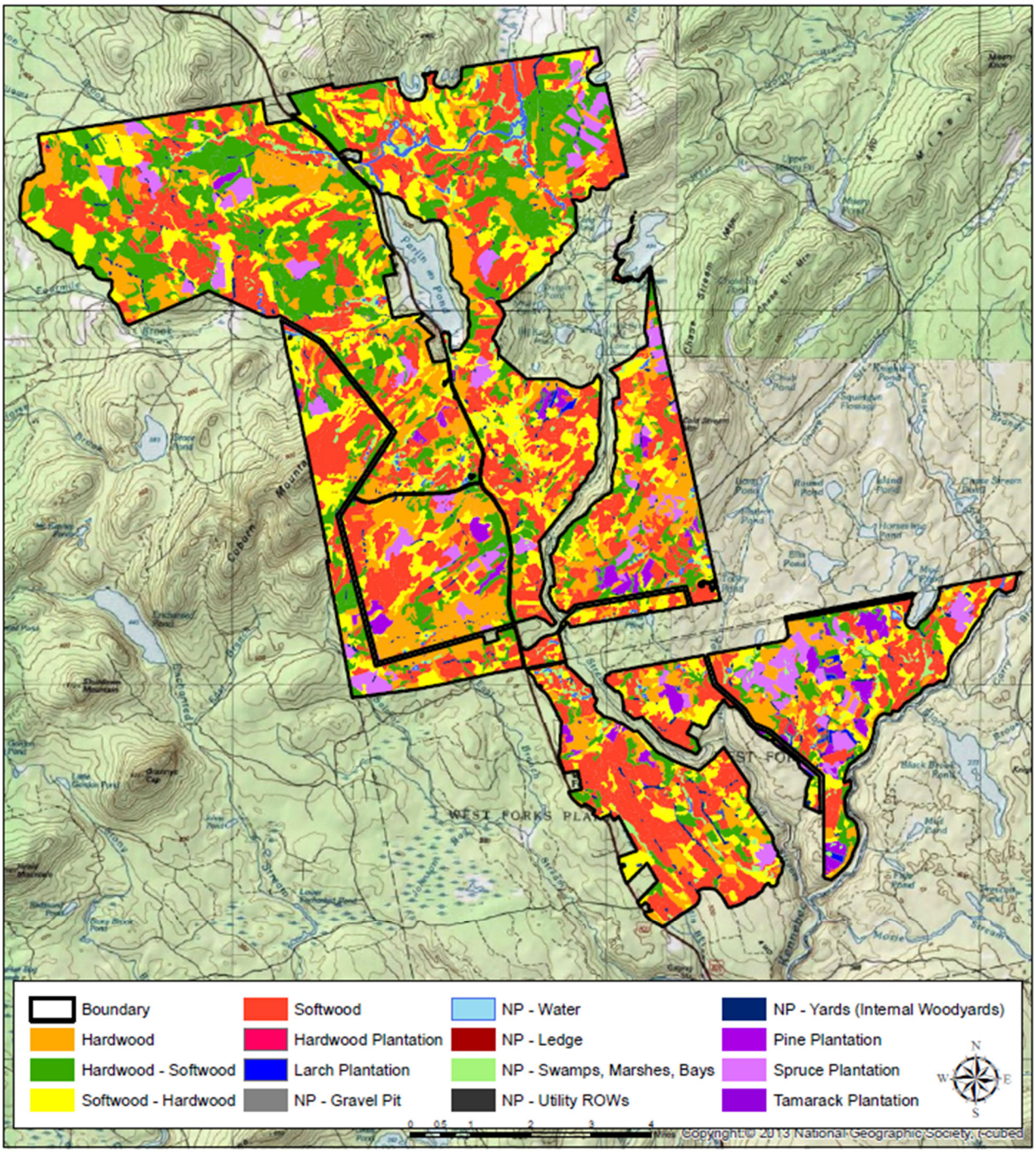
Productive	CoverType	Gross Acres *	Productive Acres **
Yes	Aspen	202	196
	Conifer - Hardwood	9,298	9,102
	Hardwood	7,766	7,558
	Hardwood - Conifer	10,025	9,794
	Hardwood Plantation	16	15
	Larch Plantation	227	221
	Northern Hardwoods	417	403
	Pine Plantation	1,133	1,120
	Softwood	16,191	15,952
	Spruce Plantation	2,444	2,410
	Swamp Conifer - not Pine	26	26
	Tamarack Plantation	10	10
Yes Total		**47,754**	**46,806**
No	NP - Gravel Pit	57	0
	NP - Large Streams	56	0
	NP - Ledge	15	0
	NP - Open Water, Reservoirs, L	72	0
	NP - Swamps, Marshes, Bays	1,157	0
	NP - Utility ROWs	1	0
	NP - Yards (Internal Woodyards) ***	948	0
No Total		**2,306**	**0**
Grand Total		**50,060**	**46,806**

* Gross Acres = GIS Acres

** Productive Acres = Gross Acres net of any nonforest inclusions on road ROWs

*** NP - Yards (Internal Woodyards) = log landings used for harvest operations

Figure 8 - Covertype Map



5.2.2 Stand Class

Each productive stand has an assigned stand class that further defines the standing inventory based on the size, density, and species composition. The size class (numeric code) of the stand defines the development class or product class within the stand. The density class (alpha code) defines the stocking within the stand, by trees per acre for younger stands and basal area in older stands. The species code further refines the species within the stand. The tables below define the classification system. For example: A Northern Hardwood H4A is a Northern Hardwood sawtimber stand of high density.

Table 5. Stand Class Description

Covertype	Stand Class Spp	Description
Aspen	I	Aspen, Balm
Hardwood	I	Birch
	H	Mixed Hdwd
Northern Hardwoods	H	Northern Hardwood (Yellow Birch, Sugar Maple)
Pine	JP	Natural Jack Pine
	RP	Natural Red Pine
	WP	Natural White Pine
Pine Plantation	JP	Plantation Jack Pine
	RP	Plantation Red Pine
	WP	Plantation White Pine
Swamp Conifer - not Pine	S	Lowland Mixed Softwood
	T	Tamarack
	C	Northern White Cedar
	BS	Black Spruce
	Hem	Hemlock
Softwood	S	Upland Mixed Softwood
	FS	Fir Spruce PCT (PCT or release)
	Hem	Upland Hemlock
Hardwood - Conifer	HS	Mixedwood Hardwood Dominated
Conifer - Hardwood	SH	Mixedwood Softwood Dominated
Hardwood Plantation	I	Hybrid Aspen
Spruce Plantation	BS	Black Spruce Plantation
	NS	Norway Spruce Plantation
	RS	Red Spruce Plantation
	WS	White Spruce Plantation
Larch Plantation	L	Larch Plantation
Tamarack Plantation	T	Tamarack Plantation

Density Code	1 & 2 Size (TPA)	3 & 4 Size (Merch Basal Area)
A	>3,000 (>1000 Plnt)	>120 SqFt
B	>1500 (>700 Plnt)	>90 SqFt
C	>700 (>400 Plnt)	>60 SqFt
D	>400 (>250 Plnt)	>30 SqFt
E	NA	>10 SqFt

Size Code	Size Description	Based On TPA & BA
1	Seedlings	< 67% of stems have a dbh >.5" (default < 15 years of age)
2	Saplings	>67% of stems have a dbh >.5" & <67% of BA Merch
3	Pulpwood	>67% of BA Merch
4	Sawtimber	>9.0" Merch QMD or Sawtimber >67% Basal Area Softwood Covertypes or>33% Basal Area All Other

5.2.3 Size Class

Size Class is a numeric code used to define the development stage or product class of a forest stand. Size class reflects the dominant tree size within a stand, typically based upon dbh and height metrics. It helps to categorize stands into growth stages such as seedling, sapling, pole timber or sawtimber based upon tree size.

When considering Size Class as it relates to Mature Forest designation, generally Size Classes 3 and 4 are considered, however not entirely. For example, Size Class 4 generally represents stands that meet the mature forest definition. However, not all stands in Size Class 4 automatically qualify as mature forests. For example, stands in Size Class 4 that have lower stocking densities—such as those classified in stocking class E—do not meet the mature forest threshold for basal area and are therefore not counted toward mature forest milestones. Only those Size Class 4 stands that meet both the height and stocking requirements are included in mature forest calculations.

Similarly, most stands contained within Size Class 3 currently do not meet the mature forest definition. However, some stands contained within the upper end of this size class, such as those classified as 3A, may meet mature forest definitions.

5.3 Mature Forest, Growth & Yield, Future Planning

Mature Forest:

At a minimum, Commercial Forest Management Activities must result in 50% of the Productive Forest Acres with a basal area of 80 square feet per acre of live trees at least 4.5 inches diameter breast height, of which 60 square feet per acre must be at least 50 feet tall, accompanied by representative levels of well distributed standing dead and downed trees where present prior to management activity no later than December 31, 2065, and thereafter in perpetuity (the “Mature Forest Goal”).

The current mature forest percentage on the Protected Property is derived from existing stand level and two stage estimates as described above in ongoing inventory maintenance and growth. These estimates were derived from stands sampled and classified by LIDAR canopy height models. All in-progress and prescribed 2025 harvests have been accounted for.

The current mature forest percentage is a sum of all stands’ productive acres that meet the mature forest definition divided by the total productive acres in the Protected Property. Only trees equal to or greater than 50’ tall can contribute to the basal area required to meet the mature definition. The stand must have at least 60 square feet of basal area of 50 foot tall or taller trees for its productive acres to qualify as mature. The mature forest percentages will be updated each year based on the most current inventory.

Growth & Yield:

Annual growth is performed by using the Northeast Variant of the Forest Vegetation Simulator (NE FVS) growth model provided by the United States Forest Service Department of Agriculture. The NE FVS is calibrated for local conditions using Weyerhaeuser's proprietary methodology. These calibrations are derived from analysis with local Forest Inventory and Analysis (FIA) plot data.

Annual growth is performed at the stand level derived from periodic point in time sampling procedures. If stands have been partially harvested since the last point in time inventory, the inventory data used in growth are from forester thinning model estimates.

Each stand uses tree lists derived from the point in time inventories or thinning model estimates and are grown forward for the appropriate number of years since the inventory took place.

To clarify the specific modeling inputs:

Measured Height Data: Measured tree height data was not used directly in the calibration of the NE FVS model. Instead, subsampled total heights collected during field sampling are used to develop regression models at the stand species and dbh class level. These regressions are then applied to estimate total tree heights across the landscape.

Site Quality Assumptions and Soils Data: Site quality was derived from the NRCS soils series data mapped to the Briggs estimated SI50 site class for natural unmanaged spruce fir. This was done through Plum Creek's Soils Management Group mapping procedure. Further refinements were made for stands with chemical treatments and plantations with well-known ages and heights.

Forest Health and Climate Uncertainty: The current modeling framework does not explicitly incorporate uncertainty related to forest health threats (e.g., insect/disease outbreaks) or climate change impacts as these factors are not embedded within accepted models, including the NE FVS, at this time. The upper limit of density related mortality in FVS was changed from 85 percent to 75 percent to better represent an empirical endemic condition as proposed by Vandendriesche, Don. 2010[3]. This change was made to better reflect endemic conditions encountered in a forest landscape rather than theoretical optimal condition. Adaptive management strategies will be considered as part of future updates to the FMP and annual progress reporting. The modeling does account for natural mortality that occurs through stem exclusion of forest stand development.

[3] Vandendriesche, Don. 2010. FVS out of the box - assembly required. In: Jain, Theresa B.; Graham, Russell T.; Sandquist, Jonathan. Integrated management of carbon sequestration and biomass utilization opportunities in a changing climate: Proceedings of the 2009 National Silviculture Workshop; 2009 June 15-18; Boise, ID. Proceedings RMRS-P-61. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. p. 289-306.

Future Planning:

As noted previously, progress toward the Mature Forest Goal will be made at the following "Milestone" rates:

Mature Forest Milestones	
2025	13%
2035	20%
2045	30%
2055	40%
2065	50%

The rate or percentage of mature forest is calculated by dividing the productive stand acres that meet the mature forest definition by total productive stand acres within the Protected Property. However, although existing Plantations may count toward the Mature Forest Goal, any new Plantations created after the date of this FMP may not. See CE Section VII.E.1. Accordingly, when any new Plantations grow into mature forest, they will be excluded from calculations of productive stand acres meeting the mature forest definition.

Progress toward reaching the Milestones and Mature Forest Goal will be provided to Grantor in annual progress reports. Each year the inventory will be grown forward in time and all harvest will be depleted from the inventory prior to the annual progress report.

The inventory procedure above provides the framework to annually track the Mature Forest Milestones at each annual progress report. Each stand's covertype, stand class, productive acres, and mature forest basal area (trees >50 ft tall) will be provided in the annual progress report. This annual reporting will guide future harvest planning to meet the Mature Forest Milestones at each 10-year FMP update. See CE Section VII.6(a), (d).

Regular harvest scheduling will be conducted at a minimum of every 10 years to project harvest levels. The harvest schedule will be a guide to ensure Mature Forest Milestones are met and not to be used as an absolute annually, to ensure there is flexibility for weather, forest product markets, logger capacity, and other harvest related considerations. The Woodstock Optimization Studio, a Remsoft product, will be used to conduct the harvest scheduling procedures. Woodstock is a purpose-built and highly adaptable optimization model for end-to-end forestry planning and scheduling activities.

5.4 Silvicultural Considerations

Silviculture prescriptions selected at the stand level across the Protected Property will be the responsibility of Maine licensed professional foresters and are subject to the unique characteristics of each stand and unforeseen future conditions. In general, management within the Protected Property will be primarily even-aged regimes outside mature riparian corridors, other state mandated riparian areas, and other special designated areas. Management in all areas of the Protected Property will ensure that the Mature Forest Milestones are met.

Rotation lengths will be dictated by site index, covertype, markets, and the Mature Forest Milestones. Harvest schedules will be run periodically to ensure the footprint is meeting the mature forest milestones and other requirements for the Protected Property.

Even-aged thinning regimes will be implemented in plantation covertypes and natural softwood covertypes to develop product classes of higher and better value where the individual stand dynamics warrant. Stands that are thinned may only be counted toward the Mature Forest Milestones if the residual stand post-thinning continues to meet or exceed the mature forest description.

Within the Mature Forest Habitat Buffers, other state mandated riparian areas, and other special designated areas, a select harvest regime will be implemented. Tree removal will consider tree species longevity, wildlife value, and Mature Forest Milestones. These select harvest regimes will ensure the residual stand condition either meets the mature forest designation at time of harvest or does not impair the stand from meeting the mature forest requirements.

Planting can be implemented within the guides of not exceeding the max plantations allowed by the CE for the Protected Property.

Mixed-Wood Stand Characterization (Beech and Balsam Fir Components)

As noted in Section 3.1, mixed-wood stands comprise approximately 40% of the forested acreage on the Protected Property. These stands are composed of a combination of coniferous and deciduous species, with balsam fir and American beech representing material components within their respective strata. The table below shows the actual components of beech and fir.

Table 6. American Beech and Balsam Fir Tons per Mixedwood Stands

		Total Tons			
CoverType	Species	Outside Riparian Zones	100-330FT Riparian	100FT NoHarvest	Grand Total
Conifer - Hardwood	Balsam Fir	62,778	9,146	6,751	78,675
	Beech	2,605	433	291	3,329
	Other Species	165,387	30,260	24,518	220,165
Conifer - Hardwood Total		**230,770**	**39,838**	**31,560**	**302,169**
Hardwood - Conifer	Balsam Fir	33,008	3,448	2,530	38,985
	Beech	16,323	1,803	1,267	19,393
	Other Species	188,343	23,078	18,942	230,363
Hardwood - Conifer Total		**237,673**	**28,330**	**22,739**	**288,742**
Grand Total		**468,443**	**68,168**	**54,300**	**590,911**

Balsam Fir Component

As shown in the Table above, Balsam fir is a dominant softwood species within many mixed-wood stands and is susceptible to spruce budworm. The Forest Health section (3.2) outlines that balsam fir is actively monitored and managed under the statewide Spruce Budworm mitigation strategy, which includes L2 larval surveys, hotspot identification, and risk-based silvicultural planning.

Beech Component

American beech is also present in the hardwood fraction of mixed-wood stands and is increasingly impacted by Beech Leaf Disease (BLD), which has been confirmed in southern Somerset County. While no detections have yet occurred on the Protected Property, it is expected within the next few years. Beech is generally retained where healthy, but its long-term viability is being evaluated due to disease pressure. Future silvicultural prescriptions may shift toward promoting more resilient hardwood species in affected areas as the science on BLD management improves in the future.

Overall Stand Quality

Currently, overall stand quality across the Protected Property is assessed as good to very good, with many younger stands exhibiting strong vigor and healthy development. Stand health and structural conditions will continue to be monitored through routine field assessments and inventory updates. As conditions evolve, management strategies will be adjusted in coordination with the Holder to ensure continued progress toward the Mature Forest milestones required under the Conservation Easement.

Pre-Harvest Planning and Prescription Identification

Pre-harvest planning is a critical step to ensure that harvest activities align with both regulatory requirements and long-term conservation goals. The process includes:

- **Stand Assessment:** Each stand is evaluated using up-to-date inventory data, including basal area, species composition, and size class distribution. This assessment identifies stands for candidates for Overstory Removal (OSR), Clearcut (CC), or thinning treatments.
- **Prescription Development:** The Silvi-Key flowchart, referenced below, is used to help determine the appropriate harvest prescription. For example, stands exceeding 450 TPA (trees per acre) of quality regeneration may be scheduled for OSR. Stands not meeting these thresholds may be deferred for future treatment.
- **Silviculture Key:** The Silviculture Key is a proprietary tool developed using the latest science available for the Acadian Forests of the Northeast. This tool provides structured guidance for developing harvest prescriptions and planning silvicultural treatments across different stand types. The key is used in conjunction with shifting mosaic management strategies and ensures that, by 2065, at least 50% of productive acres meet and maintain the mature forest conditions as required by the Conservation Easement.
- **Regulatory Compliance:** All harvest plans are developed or reviewed by a licensed forester, and clearcut prescriptions over 75 acres require submission to the Maine Forest Service for approval. Regeneration requirements and separation zones are strictly observed.

B-line Thinning and Residual Stand Status

B-line thinning is utilized as an intermediate silvicultural treatment in stands that do not meet the criteria for overstory removal or clearcutting. The objective of B-line thinning is to improve stand structure and promote further development of quality regeneration and residual crop trees while maintaining or progressing toward the mature forest conditions required by the Conservation Easement.

A residual stand following B-line thinning will only be classified as “mature forest” if it meets the following criteria:

- **Basal Area:** At least 60 square feet per acre of live trees that are 50 feet or taller and at least 80 square feet per acre total of live stems greater than 4.5 inches dbh (for productive acres).

If, after thinning, the residual stand does not meet these thresholds, it does not qualify as mature forest. This approach ensures that all silvicultural thinnings are aligned with the long-term goal of

achieving and maintaining mature forest conditions across at least 50% of productive acres by 2065, as stipulated in the Conservation Easement.

Quality Regeneration and Overstory Removal

Overstory removal is only prescribed when there is sufficient quality regeneration established in the understory. The standard for "quality regeneration" is defined as:

- **>450 trees per acre (TPA)** of vigorous, desirable species (including maple, birch, oak, ash, aspen, spruce, and fir).

Prior to overstory removal, stands are assessed to confirm that this regeneration threshold is met. If the threshold is not achieved, the stand is either deferred for further development or managed with additional treatments to encourage regeneration.

Clearcut Regeneration Standards

Clearcutting is subject to strict regeneration requirements:

- **Regeneration Monitoring:** All clearcut areas must be regenerated to a new stand of trees that meets specific density and height requirements within five years, in accordance with the Maine Forest Practices Act.
- **Intervention Measures:** If natural regeneration is insufficient, site preparation (including herbicide application or planting) may be employed on a case-by-case basis to ensure successful establishment of the next forest cohort.
- **Documentation and Reporting:** Foresters monitor and document regeneration progress, and interventions are planned if stocking or species composition is inadequate. Results are shared with the Holder and relevant agencies during annual meetings.

Harvest Plan Elements

The following is an example of a harvest plan, illustrating the standard elements and considerations included in operational planning for timber harvests conducted on the Protected Property. The example is intended to demonstrate how site-specific information, silvicultural objectives, environmental safeguards, and operational details are integrated to ensure compliance with regulatory requirements and best management practices. Those elements are as follows:

Township: [Insert Township Name]

Notification Number: [Insert FON]

Forester: [Insert Forester Name & License]

Logging Contractor: [Insert Contractor Name]

Harvest Prescription Determined by Silviculture Key: [e.g., Clear Cut with Residuals, Selection Harvest, Patch Cut]

Silviculture Key:

The Silviculture Key is a tool developed using the latest science available for the Acadian Forests of the Northeast. This tool provides structured guidance for developing harvest prescriptions and planning silvicultural treatments across different stand types. The key is used in conjunction with shifting mosaic management strategies and ensures that, by 2065, at least 50% of productive acres meet and maintain the mature forest conditions as required by the Conservation Easement.

Logging Method: [e.g., Mechanized – Tree Length, Hand Crew, Processor/Forwarder]

Estimated Acres: [Insert Number of Acres]

Soils: [e.g., Well Drained, Poorly Drained]

Slope Class: [e.g., Gentle Slope (0–8%), Steep (16–35%)]

Operability: [e.g., Summer, Winter, All Season]

Roads: [e.g., Flagged, Permit Approved]

Property Boundary: [e.g., NA, Blazed & Flagged]

Silviculture Objective: [e.g., Natural Softwood Regeneration]

Harvest Type: [e.g., Clear Cut, Thinning, Overstory Removal]

Supervision: [Insert Supervisor Name]

Environmental and Safety Considerations:

- Implement all BMPs (see BMP manual)
- Retain scattered dead & live trees within block
- Protect unique habitats and water quality as identified
- Pre-site safety assessment completed

5.5 Best Management Practices

All Forest Management Activities on the Protected Property are performed in accordance with scientifically developed Best Management Practices that protect water quality by minimizing soil erosion. All Forest Management Activities occurring on the Protected Property will be supervised by a Maine licensed professional forester.

Applicable Best Management Practices and Statewide Standards for Timber Harvesting and Related Activities in Shoreland Zones are attached hereto as **Appendices G and I**, respectively. These BMPs, as may be updated, revised, or replaced over time, will be followed under this FMP.

Such Best Management Practices will be supplemented by the requirements of this FMP to achieve and retain Mature Forest Habitat and Perennial Stream Buffers as outlined in Section VII.A.6 of the CE.

5.6 Road Maintenance and Construction

Grantor reserves the right to construct, install, maintain, and relocate land management roads, including culverts, bridges, other similar drainage and support structures and erosion control devices, winter haul roads, gates, skid trails and skid roads, timber landing areas, and equipment and vehicle parking areas, associated with Grantor's reserved rights, including to support Forest Management Activities and Non-Intensive Outdoor Recreation on the Protected Property; provided that any such roads, parking areas, and water crossings shall abide by applicable local, state, and federal laws and regulations. The establishment of any new land management roads or the relocation of existing land management roads requires prior written approval from Holder.

Grantor reserves the right to maintain and use all pre-existing roads and landings contained within the Perennial Stream Buffer for future Forest Management Activities as reviewed and documented in the Baseline Documentation Report. Existing roads or landings contained within the Perennial Stream Buffers cannot be expanded unless prior written approval is obtained from the Holder.

Construction or relocation of new roads requires prior approval from Holder, including as may be addressed in a previous Annual Meeting, provided that winter haul roads only require prior approval by Holder if they cross Perennial Streams. See CE Section VII C.4; CE Section VII D.2; CE Section VII.A.6. Routine maintenance, repair, and replacement of roads or bridges does not require notice or approval by Holder.

Regardless of whether notice and/or approval by Holder is required, all road maintenance and construction activities will adhere to Best Management Practices that protect water quality by minimizing soil erosion and will be supervised by a licensed professional forester. These BMPs, as may updated, revised, or replaced over time, will be followed under this FMP.

5.7 Access

Motorized Public Access On and Across the Property:

The Protected Property contains 39.8 miles of permanent road access through and across the Protected Property on 18 rights of way to ensure access to the Cold Stream Forest detailed in **Appendix J**. In addition, State Route 201, also known as Old Canada National Scenic Byway, travels north and south through the center of the Protected Property. No changes to existing motorized access are required under the Conservation Easement or addressed in this FMP.

Non-Motorized Public Access On and Across the Protected Property.

The Conservation Easement grants the public with non-motorized access on and across the Protected Property for Non-Intensive Outdoor Recreation and prohibits Grantor from discouraging such access. See CE Section VII.F. However, Grantor retains the right to establish reasonable rules and regulations governing such non-motorized access, such as regulating noise, fires, camping, etc. Examples of such presumptively reasonable rules and regulations are set out in Section VII.F.3 of the Conservation Easement. Moreover, Grantor retains the right to temporarily restrict public access by closing access points, trails, or roads as necessary for safety, ecological, or other specified reasons. See CE Section VII.F.3. Before such restrictions are imposed, consideration must be made regarding the nature of the access being restricted, and the duration and reason for the restriction. Based on the above considerations, prompt written notice to Holder may be required. See CE Section VII.F.3.

Existing recreational trails, such as ATV, hiking, and snowmobile trails, are set out in the Baseline Documentation. The Conservation Easement allows but does not require Grantor to either establish and maintain, or allow others to establish and maintain, these or any additional unpaved trails, provided that any new trail work is done with Holder's approval and in accordance with BMPs.

6.0 Non-Timber Resource Planning Considerations

This section describes the non-timber resource planning considerations, including those set out in Section VII.A.6(b) of the Conservation Easement, after consultation with the Maine Department Inland Fisheries and Wildlife (MDIFW) and the Maine Natural Areas Program (MNAP).

6.1 IF&W and MNAP Stakeholder Consultation

As required in Section VII.A.6(b)(iii), (v) of the Conservation Easement, the Grantor and Holder held a Stakeholder Consultation Meeting on March 1, 2025 with MDIFW and MNAP personnel in order to identify the Confirmed or Potential Endangered, Threatened and Special Concern Species as well as any Rare Plant Populations or Rare or Exemplary Natural Communities found on the Protected Property as of the date of this FMP. In addition, information regarding Essential Habitat, Significant Wildlife Habitat and Aquatic Resources was provided. The Grantor recognizes the importance of considering these species, populations and communities and of working to ensure the habitats that they rely on are maintained or enhanced and that forest management activities do not adversely impact these important ecologies.

6.2 Rare, Threatened, Endangered Plant & Animal Species of Special Concern

All Forest Management Activities will be conducted in a manner that is consistent with the following guidelines, standards and practices. Following is a description of the known or likely presence of state and/or federal threatened or endangered plant and animal species, and rare and exemplary natural communities, developed in Consultation with IF&W and MNAP agencies and personnel. Maps are produced from data layers provided by Inland Fisheries and Wildlife as well as Maine Natural Areas Program.

6.2.1 Confirmed Endangered, Threatened and Special Concern Species

The following Endangered, Threatened and Special Concern Species and exemplary natural communities have been documented on the Protected Property.

Bicknell's Thrush (State Threatened)

1. **Introduction**

Bicknell's Thrush is a rare and range-restricted migratory songbird that breeds in high-elevation coniferous forests in the northeastern United States and eastern Canada. In Maine, its breeding habitat is primarily found in subalpine fir-dominated forests and occurs locally along the Coburn Mountain Range. Habitat is usually dominated by balsam fir (>30%) where a history of disturbance has resulted in stunted dense understory, usually at elevations >2,500 feet. A map of the habitat with confirmed observations of Bicknell's Thrush on the Protected Property is shown in **Figure 9** below. Special management guidelines should be implemented in these areas, as follows:

2. **Habitat Description**

Preferred Breeding Habitat:

- Elevation: Typically >2,500 feet on suitable north-facing slopes.
- Forest Type: Dense, stunted balsam fir and red spruce forests, with dense understory.
- Stand Structure: Multi-aged, regenerating stands with high stem density of trees 6 to 26 feet tall with diameters of ≥4 inches dbh. These characteristics would be found in S1, S2, SH1 & SH2 stands withing the Protected Area.
- Canopy: Partially open to closed, with abundant cover and horizontal structure.
- Key Features: Moist soils, mossy ground cover, minimal human disturbance.

3. **Management Objectives**

- Maintain and enhance suitable breeding habitat for Bicknell's Thrush.
- Minimize fragmentation and edge effects in high-elevation forests.
- Coordinate silvicultural practices with breeding season to reduce disturbance.
- Promote natural regeneration of balsam fir and spruce species.
- Retain native fruit bearing shrubs and trees, such as Mountain Ash.

4. **Management Guidelines**

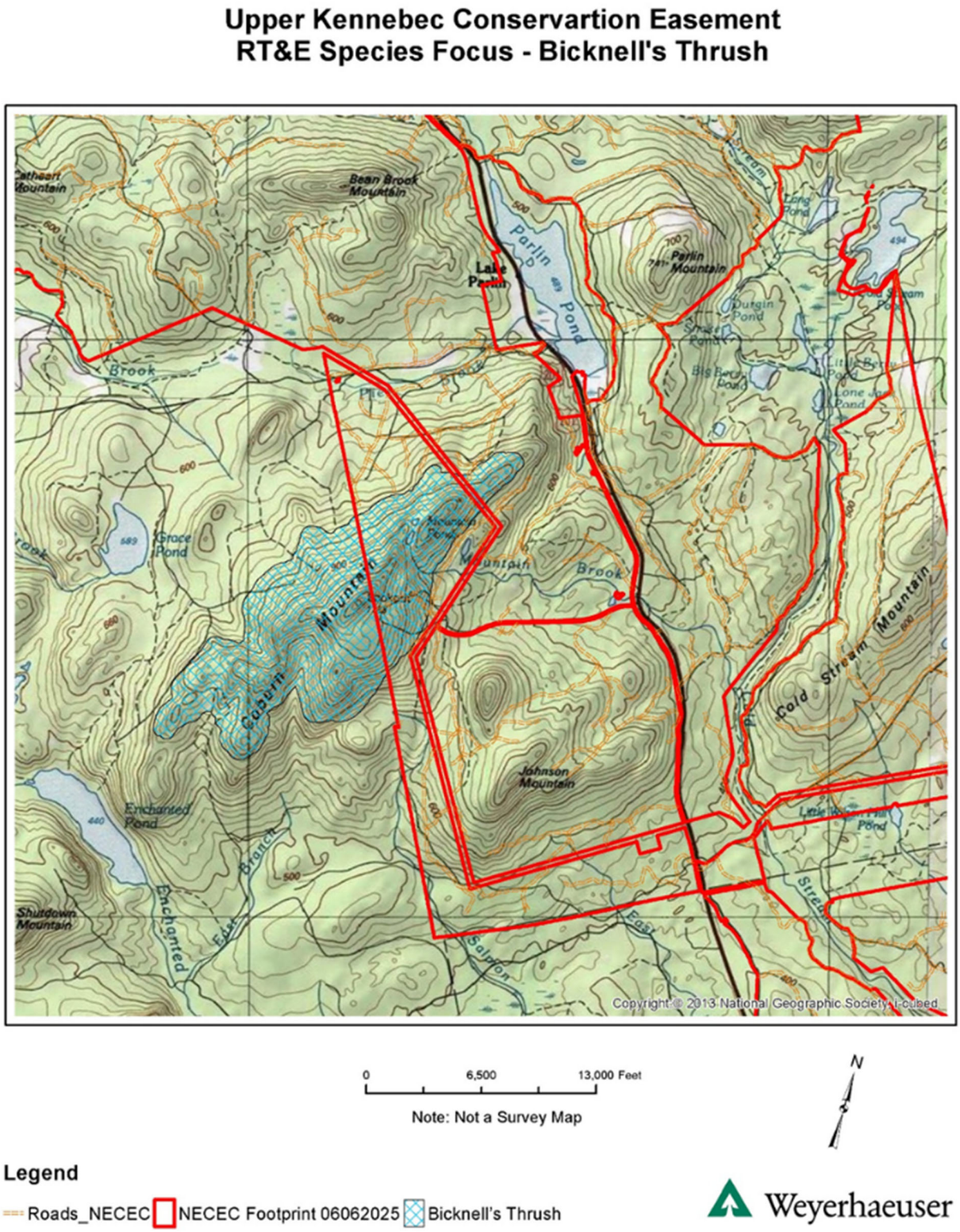
4.1. Silvicultural Practices

- Retain patches of dense regeneration within managed areas.

4.2. Seasonal Timing Restrictions

- Avoid mechanical operations (e.g., harvesting, road construction) in mapped area shown in Figure 9 within stands that meet breeding habitat definition (see Stand Structure above) during the nesting season: May 1 – July 31.

Figure 9. Map of Documented Occurrence of Bicknell's Thrush on Protected Property.



Rusty Blackbird (State Special Concern)

1. **Introduction**

The Rusty Blackbird is a medium-sized songbird associated with boreal wetlands, forested swamps, and riparian corridors. Most of the wetlands utilized by this species are within the Mature Forest Habitat areas on the Protected Property. Once considered common, its population has declined by over 85% since the mid-20th century. This bird is represented by less than 50 current occurrences throughout the State of Maine and occurs at several locations on the Protected Property, as depicted in **Figure 10**. Special management guidelines should be implemented in these areas, as outlined below.

Maine represents the southern edge of its core breeding range where these birds breed in dense, young or stunted northern softwood and mixedwood forests, especially those with standing water, alder thickets, and sphagnum bogs. Habitat loss, predation, wetland degradation, and climate change are major threats.

Softwood silviculture also creates habitat around wetlands where suitable nesting and foraging habitat does not occur within the wetland by promoting portions of stands with young spruce-fir trees <= 10 feet tall and <= 2 inches in diameter. Promoting stand characteristics like this between wetlands and uplands is beneficial for this species.

Breeding individuals are known to abandon their nests because of predators, primarily red squirrels, or human disturbance. MDIFW recommends at least a 100-foot no cut riparian buffer around wetland complexes known to host Rusty Blackbird populations on the Protected Property. There are four such known complexes, all of which should have a 100-foot no harvest buffer within the Perennial Stream No-Harvest Buffer.

2. **Habitat Description**

Preferred Breeding Habitat:

- Dominated by black spruce, balsam fir, tamarack, and northern white cedar.
- Wetlands such as beaver ponds, flooded swamps, peatlands, and slow-moving streams, and their associated riparian areas.
- Presence of standing deadwood, downed woody debris, and shrubby understory (e.g., alder and willow).
- Low to moderate canopy cover (30–70%) near water sources.

Key Habitat Indicators**:**

- Sphagnum moss and moist, mossy forest floor.
- Proximity to shallow, stagnant or slow-moving water bodies.
- Isolated, low-elevation wetlands or drainages within forests.

3. **Management Objectives**

- Maintain and enhance breeding and foraging habitat for Rusty Blackbird.
- Retain hydrologic function and integrity of forested wetland complexes.
- Coordinate forest management and road building activities to minimize disturbance during the breeding season.

4. **Management Guidelines**

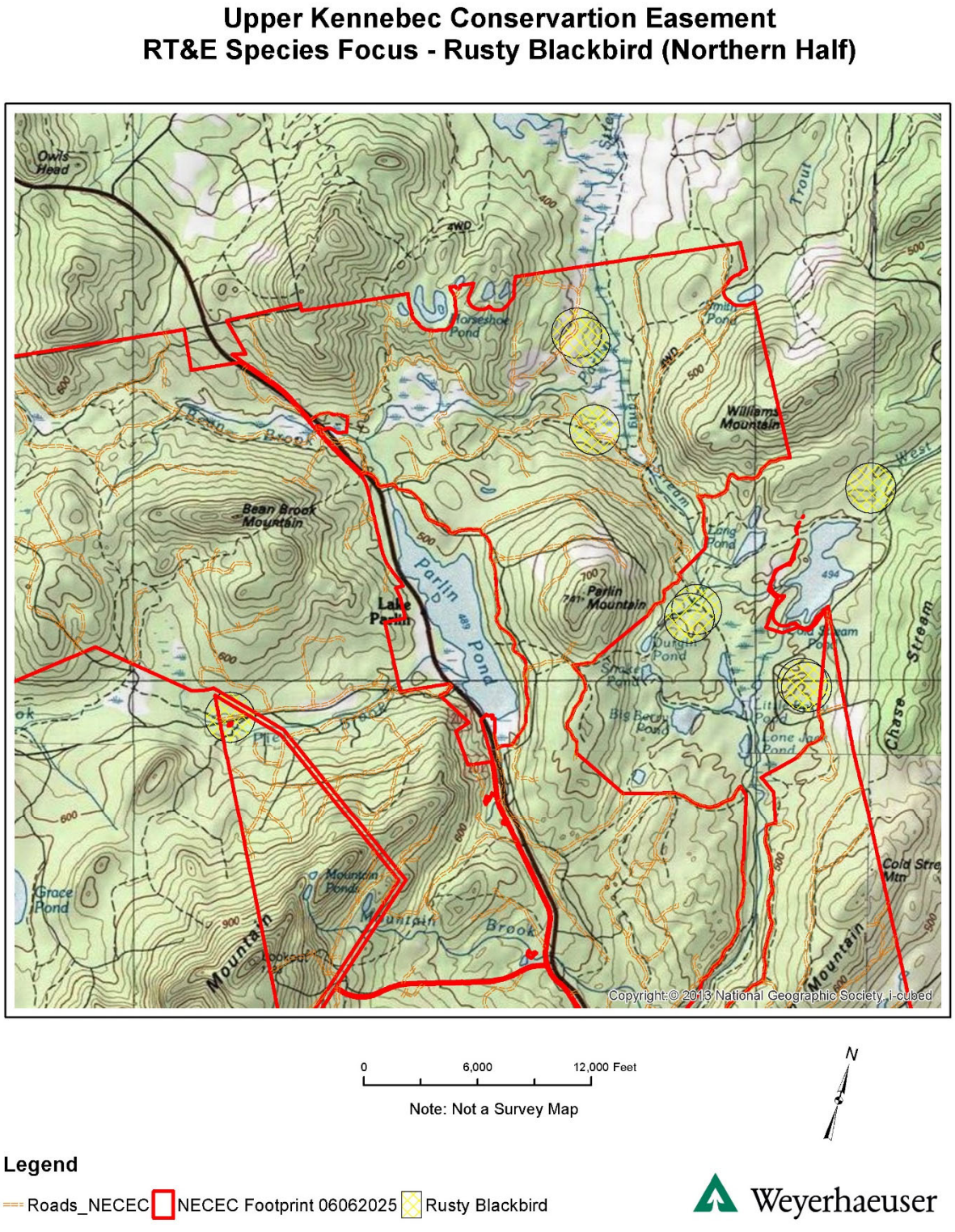
4.1. Silvicultural Practices

- Softwood silviculture can create habitat around wetlands where suitable nesting habitat does not occur.
- When stand is suitable for nesting, leaving scattered trees (snags and live trees) in softwood stands to serve as territorial perch trees.
- Maintain and protect existing wetland and riparian habitats with at least a 100' no-harvest buffer on wetland complexes confirmed, and shown in Figure 10, to host Rusty Blackbird.

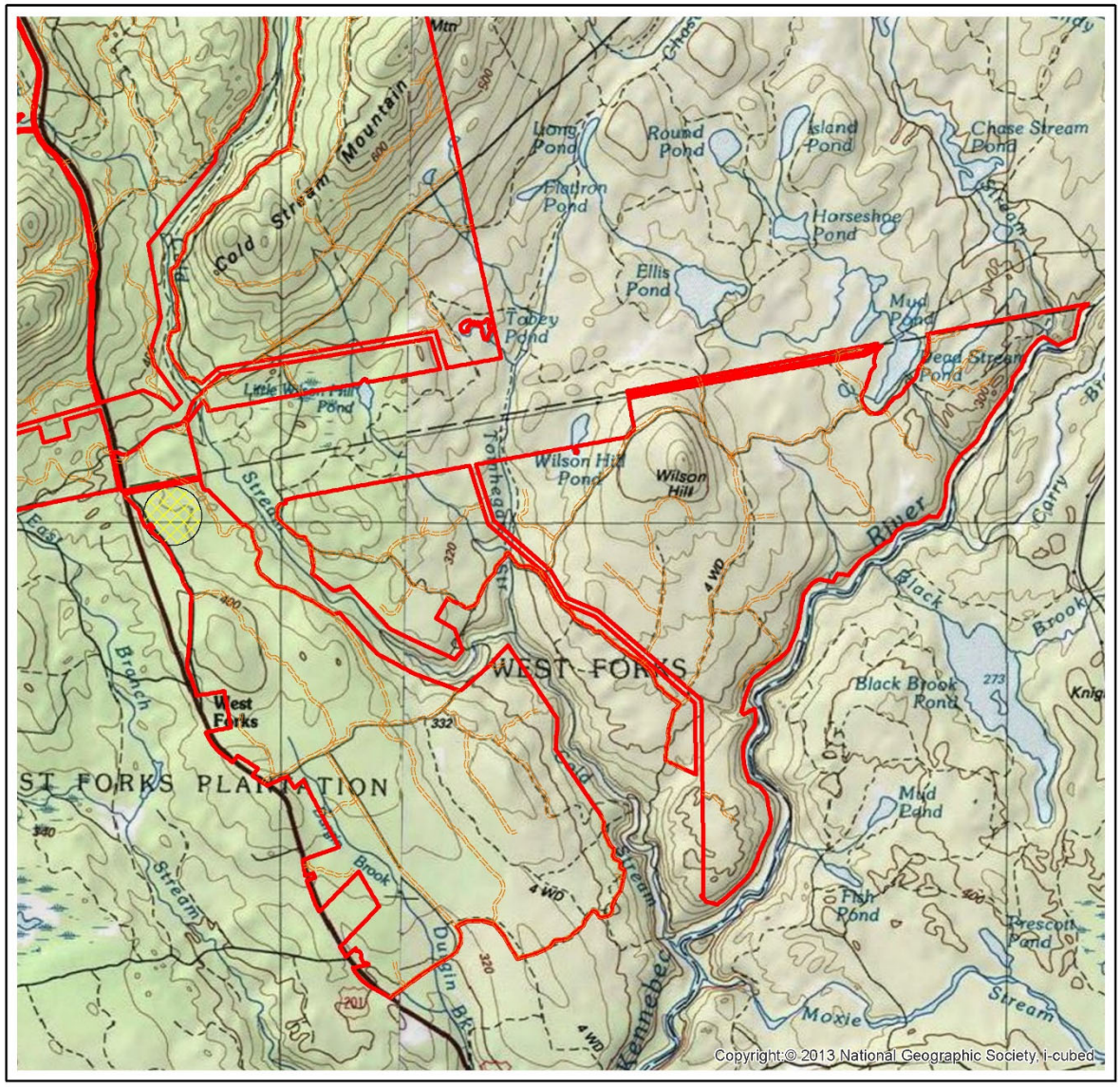
4.2. Seasonal Timing Restrictions

- Minimize disturbance from mechanical operations (e.g., harvesting, road construction) around occupied breeding habitat during the breeding season: May 1 – June 30.

Figure 10. Maps of Documented Occurrence of Rusty Blackbird on Protected Property.



Upper Kennebec Conservartion Easement
RT&E Species Focus - Rusty Blackbird Southern Half)



0 6,000 12,000 Feet

Note: Not a Survey Map

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Legend

Roads_NECEC | NECEC Footprint 06062025 | Rusty Blackbird

Weyerhaeuser

Roaring Brook Mayfly (State Threatened)

1. **Introduction**

The Roaring Brook Mayfly is an aquatic insect restricted to cold, high-elevation stream systems in northeastern hardwood-conifer forests. The larval stages are fully aquatic and rely on high water quality, stable streambed substrates, and well-shaded riparian corridors. Population declines may be associated with riparian disturbance particularly causing sedimentation, forest road construction, and increased stream temperatures. It is currently known only at 14 sites in Maine's central and western mountains. Maine occurrences are all above 1200 feet elevation and bordered by intact deciduous or mixed forest. The Roaring Brook Mayfly has one known incidence of occurrence on the Protected Property – See Map in **Figure 11**. Special management guidelines should be implemented in these areas, as follows:

2. **Habitat Description**

The life history of the Roaring Brook Mayfly is poorly known. It likely has a single-year life cycle, with most of the time spent instream as eggs and nymphs, and a brief period spent in the riparian area as adults in late summer and early fall.

- **Stream Conditions**: Cold, oxygen-rich water at high elevations with stable flows and low turbidity.
- **Riparian Vegetation**: Dense hardwood or mixed wood canopy providing >70% shade over stream channel.
- **Substrate**: Clean gravel, cobble, and coarse woody debris for egg attachment and nymphal cover.

3. **Management Objectives**

- Maintain and enhance intact riparian habitat for Roaring Brook Mayfly.
- Protect water quality to ensure:
    - Cold water temperatures
    - Minimized sedimentation and chemical input
- Conserve riparian organic inputs (leaves and woody debris) for stream dwelling nymphs

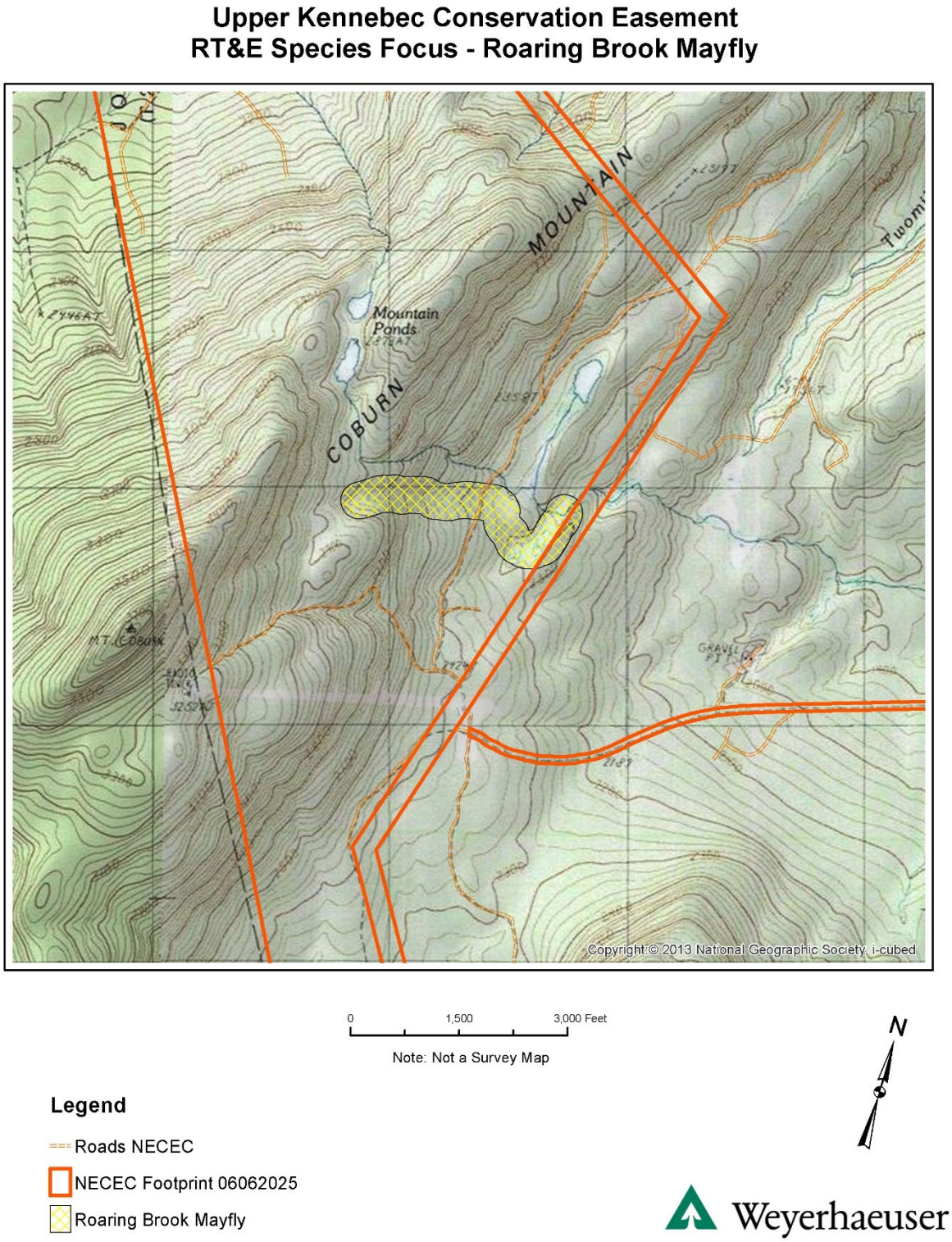
4. **Management Guidelines**

4.1. Silvicultural Practices

- For occupied streams shown in Figure 11, within the first 50 feet on both sides of the stream, establish and maintain a no-harvest buffer.
- Between 50 feet and 250 feet from occupied streams, ensure that a mature forest condition is maintained.
- Harvest only during dry or frozen conditions.
- Minimize construction of roads, log landings or other permanent land use conversions within the 250-foot buffer of occupied streams.
- On slopes facing the stream, maintain an unscarified filter strip of at least the width indicated below between the normal highwater mark of the stream and any exposed mineral soil created by management activities. These recommendations follow minimum performance standards for timber harvest as defined in Maine LUPC Rules and Regulations (Chapter 10.27E).

Average Slope of Land (%)	**Width of Strip** (feet along surface of ground)
0	25
10	45
20	65
30	85
40	105
50	125
60	145
70	165

Figure 11. Map of Documented Occurrence of Roaring Brook Mayfly on Protected Property.



6.3 Rare and Exemplary Botanical Features

Hairy Arnica (State Threatened)

1. **Introduction**

Hairy Arnica (*Arnica lanceolata*) is a State-Threatened (S2, G3) rare plant species in Maine, where it reaches the southeastern edge of its natural range. It is typically found in open, cool, ledgy or gravelly rivershores and cliffs in subalpine environments, where the natural lack of soil and harsh environment restricts competition from other vegetation. Hairy Arnica is sensitive to disturbance and changes in the environment and has been documented in twelve towns from four counties in Maine. One population of this species has been documented on the Protected Property – See Map in **Figure 12.** Management guidelines will be implemented in this area.

2. **Habitat Description**

- Hairy Arnica prefers partial sun to open canopy conditions with well-drained, rocky or sandy acidic soils, typically on ridgelines or south-facing slopes.
- Ledgy or gravelly shores or wet cliffs
- Alpine or Subalpine – non-forested uplands
- Non-tidal Rivershore (non-forested, seasonally wet)

3. **Management Objectives**

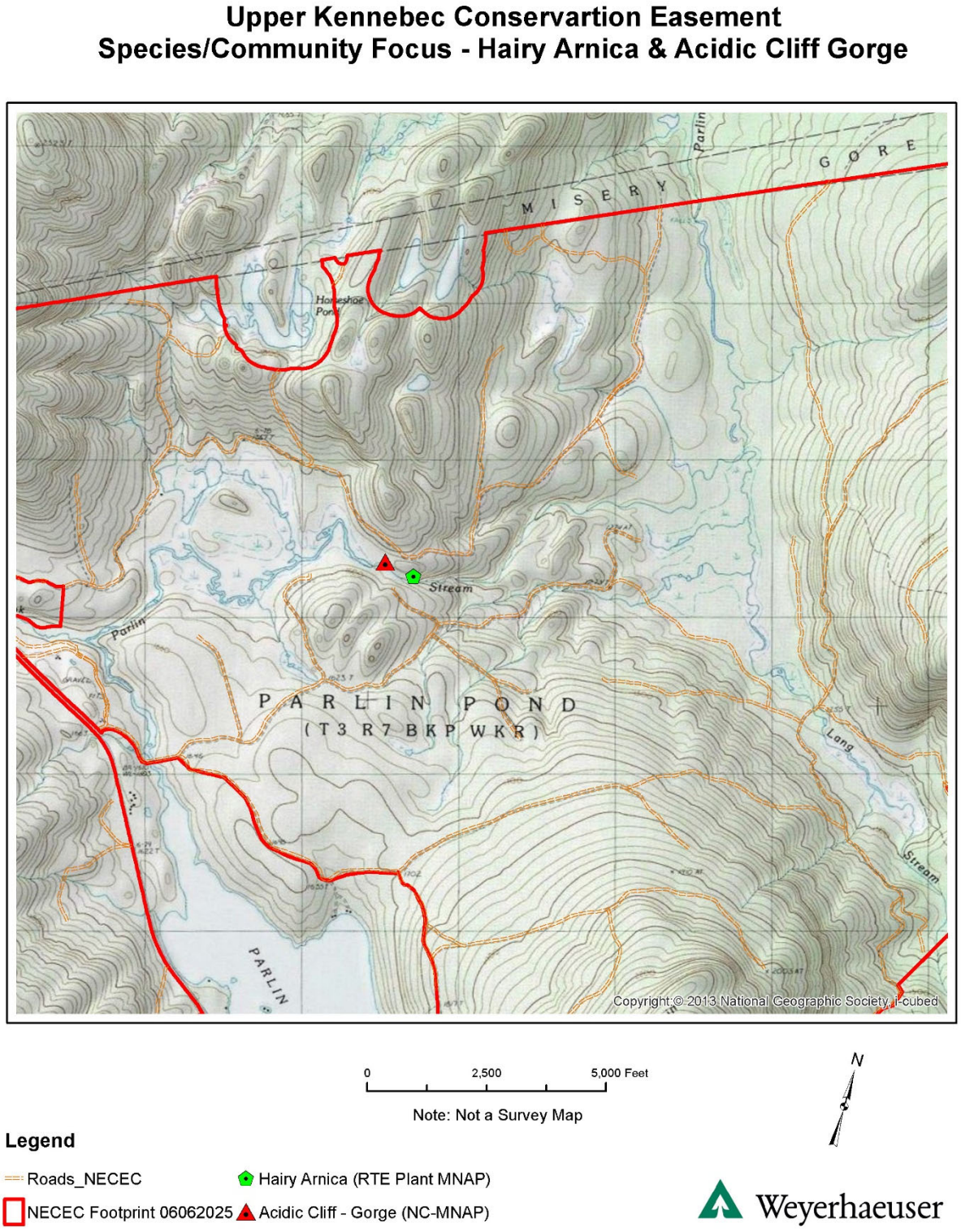
- Maintain and ensure the persistence of the known populations of Hairy Arnica found within the Protected Property.

4. **Management Guidelines**

4.1. Silvicultural Practices

- Provide a 25-foot no-harvest exclusion buffer around mapped sites of Hairy Arnica.
- Forest management activities adjacent to the exclusion buffer will be conducted to prevent impact on Hairy Arnica sites and will minimize soil and root zone disturbance.

Figure 12. Map of Documented Occurrence of Hairy Arnica and Acidic Cliff Gorge on Protected Property.



Acidic Cliff-Gorge (Exemplary Natural Community)

1. **Introduction and Habitat**

An Acidic Cliff-Gorge is a sparsely vegetated, vertical to nearly vertical natural community type that is found infrequently throughout the Maine landscape but more commonly found in the northern portions of the state. The steep outcrops of non-calcareous, erosion-resistant rocks, such as granite or acidic schist are typically dry, with sparce vegetation. However, a moist microclimate may be maintained over local areas by runoff or seeps from higher elevations or, in gorges, by flowing stream water. Acidic Cliff-Gorges may host cliff-nesting bird species such as peregrine falcons or golden eagles and support a unique assemblage of vascular plants and lichens.

2. **Management Objectives**

Given the nature of the habitat and where they are found, these communities are usually inaccessible and therefore likely to be minimally affected by harvest operations. One occurrence of an Acidic Cliff-Gorge natural community has been documented on the Protected Property – See Map in **Figure 12.** Management guidelines will be implemented in this area.

3. **Management Guidelines**

For any mapped and confirmed Acidic Cliff-Gorge occurrences on the Protected Property, no forest management activities will occur within the mapped community without consultation with the Maine Natural Areas Program.

6.4 Fish and Wildlife Habitat

Much of the Protected Property has ecological importance as wildlife and fisheries habitat, and protecting the property through the CE ensures that development will never adversely impact the ecological benefits of such habitats and their resident species. By preventing residential, commercial, industrial and other traditional development, conservation of the Protected Property under the terms of the CE will ensure the perpetual protection and preservation of its conservation values.

6.4.1 Deer Wintering Areas

1. **Introduction**

White-tailed deer are common throughout Maine but in northern portions they rely on Deer Wintering Areas (DWA) to survive winters. DWAs are dominated by softwood to provide thermal cover, decreased snow depth and access to food throughout winter. There is one zoned wintering area on the protected property: P-FW #080412 (89 acres) in Parlin Pond. Through consultation with MDIFW, a Biological Deer Wintering Area (BDWA) is identified in the southern portion of West Forks Plantation. This BDWA supports wintering deer from the Moxie Stream DWA (P-FW #060065) and Cold Stream Forest cooperative yard and is used by wintering deer during times of moderate snow depth and temperature during the yarding season. Weyerhaeuser (formerly Plum Creek) managed the Cold Stream Forest cooperative yard prior to the conservation sale as a 2,168-acre DWA. Refer to Maps in **Figure 13** for location of the Parlin Pond Twp DWA and the West Forks BDWA.

2. **Habitat Description**

From *Guidelines for Wildlife: Managing Deer Wintering Areas in Northern, Western and Eastern Maine:* "Deer wintering areas include a variety of habitat components that may change with forest condition and management strategy. These habitat components contribute to the long-term functioning of a DWA as a source of winter shelter and food."

Primary Winter Shelter

Primary Winter Shelter (PWS) consists of forest stands that provide shelter for deer during the most severe winter conditions. PWS has the following: Softwood crown closure 70% mixed or solitary stands of cedar, hemlock, spruce, and fir; and Stand height 35 feet.

Secondary Winter Shelter

Secondary Winter Shelter (SWS) consists of forest stands that provide adequate shelter for all but the most severe winter conditions. SWS has the following: Softwood crown closure between 50% and 70% mixed or solitary stands of cedar, hemlock, spruce, and fir; and Stand height 35 feet.

Non-Mature/Future Shelter Stands

Stands mapped within a DWA that do not currently meet PWS or SWS definitions provide forage (woody browse) between and adjacent to stands that provide shelter. These stands enhance the value of a DWA, especially when managed to attain PWS or SWS criteria. DWAs often include areas such as south facing slopes that enhance solar gain during late winter. These areas may not meet SWS or PWS criteria but provide microclimatic benefits that contribute to DWA functioning.

Travel Corridors

Successful functioning of DWAs on a long-term basis requires travel corridors within the DWA. Traditionally used corridors often follow streams and wetlands, or topographic features such as ridgelines and valleys. Functional corridors are wide enough to provide deer with sheltered travel ways throughout the yard and are located to maintain direct access to winter shelter.

3. **Management Objectives**

3.1. Parlin Pond P-FW #080412

- Maintain minimum of 50% of stands that are softwood dominant as conforming winter shelter
- Use active forest management and a variety of silvicultural techniques to maintain and improve forest health while promoting desired future habitat conditions.
- Maintain travel corridors connecting the mosaic of habitats for cover and food.

3.2. Biological Deer Wintering Area

- Promote softwood cover in suitable areas to enhance overwintering deer habitat.
- Maintain travel corridors connecting the mosaic of habitats for cover and food.

4. **Management Guidelines**

4.1. Parlin Pond P-FW #080412

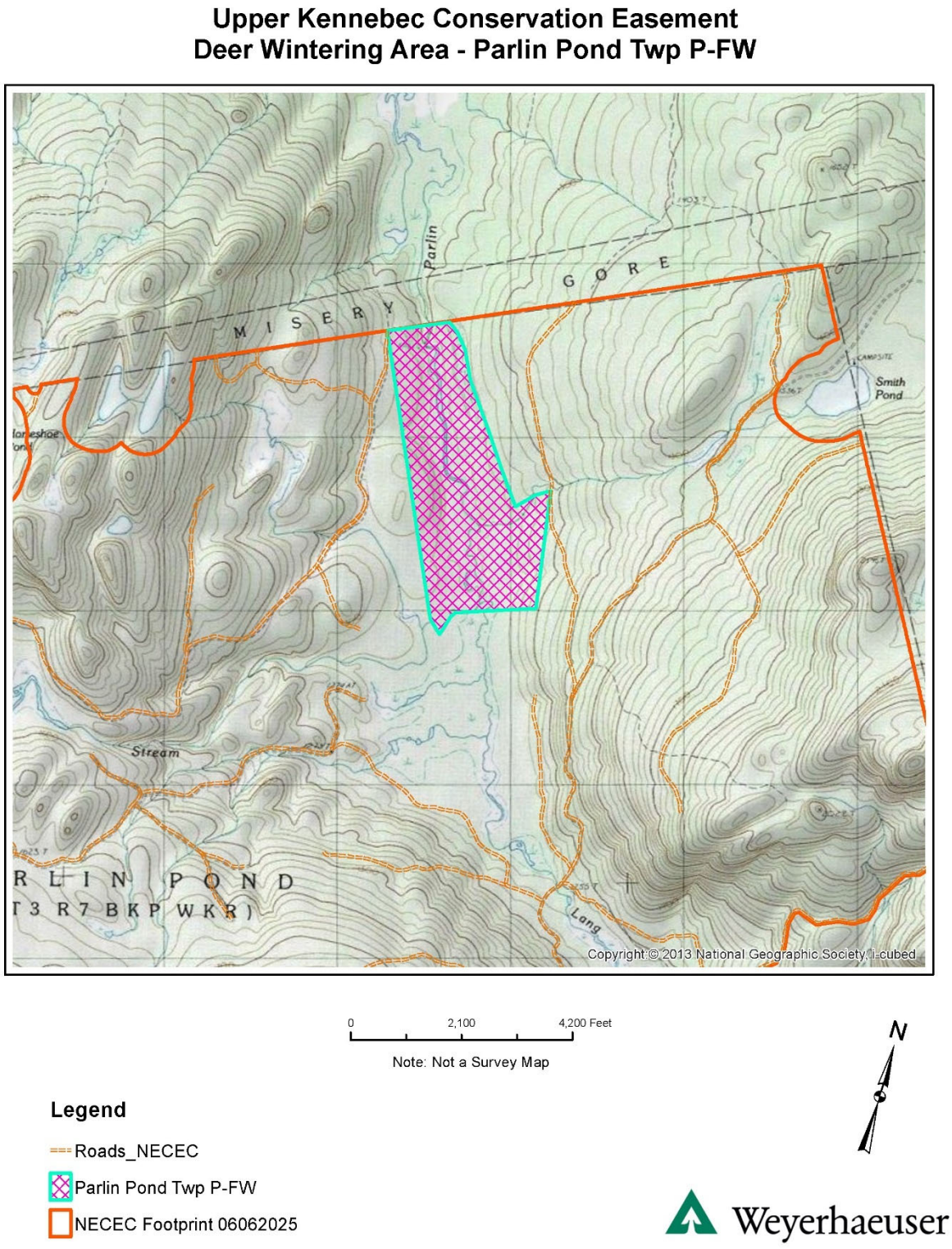
Prior to harvesting or new road construction, consultation with MDIFW regional biologists will take place and a plan will be developed collaboratively to meet the objectives above. Travel corridors

will be maintained through the Riparian Habitat Management Standards in the Conservation Easement (Section VII.A.6).

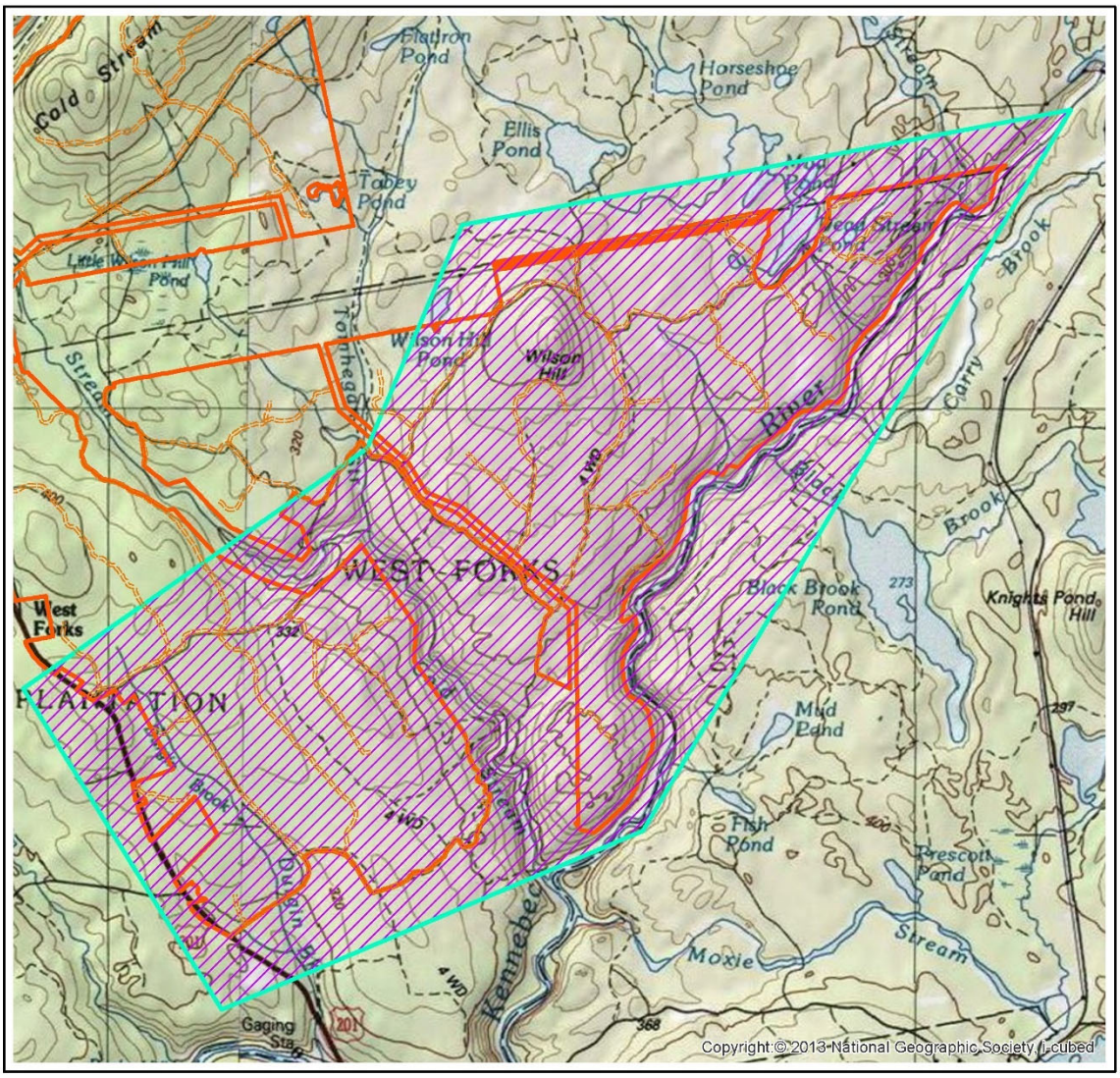
4.2. Biological Deer Wintering Area

The BDWA will be mapped in our system for awareness of supporting the adjacent deer wintering areas. When appropriate, softwood silviculture will be used to promote softwood within that area. Travel corridors connecting the various cover and food sources will be maintained through the Riparian Habitat Management Standards in the Conservation Easement (Section VII.A.6).

Figure 13. Parlin Pond Twp P-FW (#080412) and the West Forks Pla. Biological Deer Wintering Areas



Upper Kennebec Conservation Easement
Biological DWA - West Forks Habitat Mgmt Area



0 5,000 10,000 Feet

Note: Not a Survey Map

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Legend

- Roads_NECEC
- West Forks Biological DWA
- NECEC Footprint 06062025

Weyerhaeuser

6.4.2 Significant Vernal Pools

1. **Introduction**

Vernal pools are small (usually less than one acre), natural, temporary or seasonally flooded depressions/wetlands that provide breeding habitat for a variety of amphibians and invertebrates, including obligate species such as spotted salamanders, wood frogs and fairy shrimp. In Maine, Significant Vernal Pools (SVPs) and their adjacent terrestrial habitat are designated and mapped by the Maine Department of Environmental Protection (MDEP). There are three documented SVPs and one Potentially Significant Vernal Pool on the Protected Property – See Map in **Figure 14.** Special management guidelines should be implemented in these areas, as well as others identified in the future, as follows:

2. **Management Objectives**

- Protect hydrology and habitat of significant vernal pools (SVPs).
- Maintain a functional forested buffer around pools to support amphibian life cycles.
- Minimize soil disturbance and canopy loss in sensitive areas.
- Ensure compliance with Maine's Forestry Habitat Management Guidelines for Vernal Pool Wildlife (https://www.maine.gov/dacf/mfs/projects/kennebec_woodlands/downloads/documents/vernal_pool_hmg.pdf).

3. **Management Guidelines**

These guidelines shall be applied to Significant Vernal Pools shown in Figure 14. Habitat management shall be based upon the *Forestry Habitat Management Guidelines for Vernal Pool Wildlife* (Calhoun & DeMaynadier 2004) – below is the Summary of Recommended Guidelines.

3.1 Within the Vernal Pool Depression

- Avoid all mechanical activity (e.g., skidding, felling, slash disposal).
- Maintain natural leaf litter and canopy to preserve water quality and amphibian habitat.

3.2 Managed Buffer (0 –100 ft)

- No harvest or partial harvest using low-impact equipment and techniques such as extraction by either boom or cable.
- Stabilize any exposed mineral soil.

- Maintain a minimum average of 75% canopy cover of trees minimum of 20 – 30 ft. tall, uniformly distributed.
- Preserve large, downed woody material and coarse woody debris.
- Schedule harvesting outside the amphibian migration and breeding period during dry or frozen soil conditions (ideally August - March).

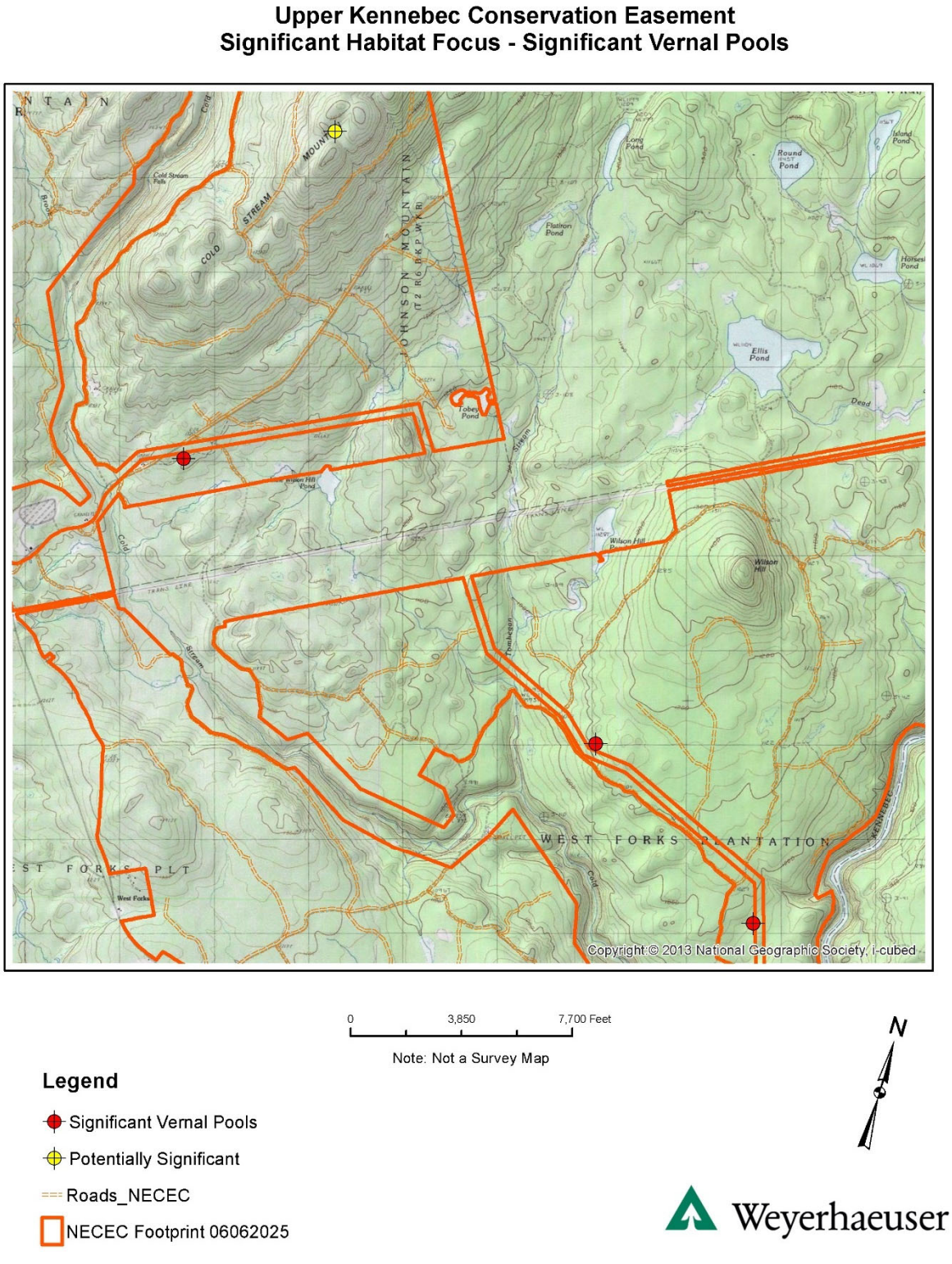
3.3 Amphibian Life Zone (100 – 400 ft)

- Partial harvest retaining at least 50% canopy cover of >20' tall trees
- Preserve as much large, downed woody material and coarse woody debris as possible.
- Schedule harvesting during dry and frozen soil conditions.

3.4 Road Construction and Access

- Avoid new roads and skid trails within 100 feet of an SVP unless no viable alternative exists.
- Road maintenance activities for existing roads can still be conducted even though they may bisect a significant vernal pool buffer.
- Employ erosion control measures (e.g., silt fencing, water bars) to protect water quality.

Figure 14. Significant and Potentially Significant Vernal Pools on the Protected Property



6.4.3 Bat Hibernacula

Four of the eight bat species in Maine are protected by the Maine Endangered Species Act, while the remaining four species are designated species of Special Concern. Endangered species include little brown bat, eastern small-footed bat, tri-colored bat and the northern long-eared bat, which is also federally Endangered. Bat species of Special Concern include big brown bat, red bat, hoary bat and the silver-haired bat.

There has not been a comprehensive statewide inventory for bats in Maine and there are no known occurrences of these bat species on the Protected Property, but it is likely that some of these eight species may be found either during spring and fall migrations or the summer breeding season or both. Further, it is possible that there may be some individuals of these species overwintering on the Protected Property.

There are no known bat hibernacula or maternity roosts on the parcel. If bat hibernacula were either documented using winter acoustic surveys, or observations in caves on the Protected Property were confirmed to be occupied, tree removal would be prohibited within ¼ mile of the hibernacula under MDIFW Chapter 8 Rule of the Maine Endangered Species Act until MDIFW were consulted for management guidelines based on the best available science at the time.

6.4.4 Inland Wading Bird and Waterfowl Habitats

1. **Introduction**

Inland waterfowl and wading bird habitats (IWWH) in Maine - such as freshwater wetlands, marshes, forested swamps, small ponds, beaver flowages, and riparian areas - are critical breeding, nesting, brood-rearing and foraging grounds for waterfowl like geese and ducks and wading birds like herons and bitterns. There are several documented IWWH areas on the Protected Property – refer to Maps in **Figure 15.** Management guidelines will be implemented in these areas.

2. **Habitat Description**

This habitat area includes the wetland area plus a 250-foot-wide zone of upland habitat around the wetland. IWWHs in Maine can be broadly classified into:

- **Forested Wetlands**: Red maple swamps, cedar swamps, or mixed hardwood wetlands.
- **Emergent Wetlands**: Marshes dominated by herbaceous plants.
- **Scrub-Shrub Wetlands**: Early successional habitats, often transitional zones.
- **Beaver Flowages and Vernal Pools**: Temporarily or intermittently flooded habitats.
- **Riparian Zones**: Forested buffers along rivers, streams, and lakes.

3. **Management Objectives**

- To protect ecological values of Inland Waterfowl and Wading Bird Habitat
- Minimize soil disturbance and canopy loss in buffer areas.
- Protect water quality and wetland integrity from management activities.
- Maintain a functional forested buffer around IWWHs to support wildlife ecologies.
- Minimize soil disturbance and canopy loss in sensitive areas.

4. **Management Guidelines**

Most of the mapped Inland Waterfowl and Wading Bird Habitat occurrences on the Protected Property are associated with a Perennial Stream that will be buffered as described in Section 4.3.3. of this Forest Management Plan. Additional Management Guidelines are as follows:

4.1 Protect Core Habitat Areas

- No harvest or ground disturbance within 100 feet of IWWH water resources as currently depicted in Figure 15 except to allow for maintenance or use of currently existing roads and landings.
- Maintain at least a 250-foot undisturbed buffer around active Great Blue Heron nesting colonies during the breeding season (April 15 through July 31st).

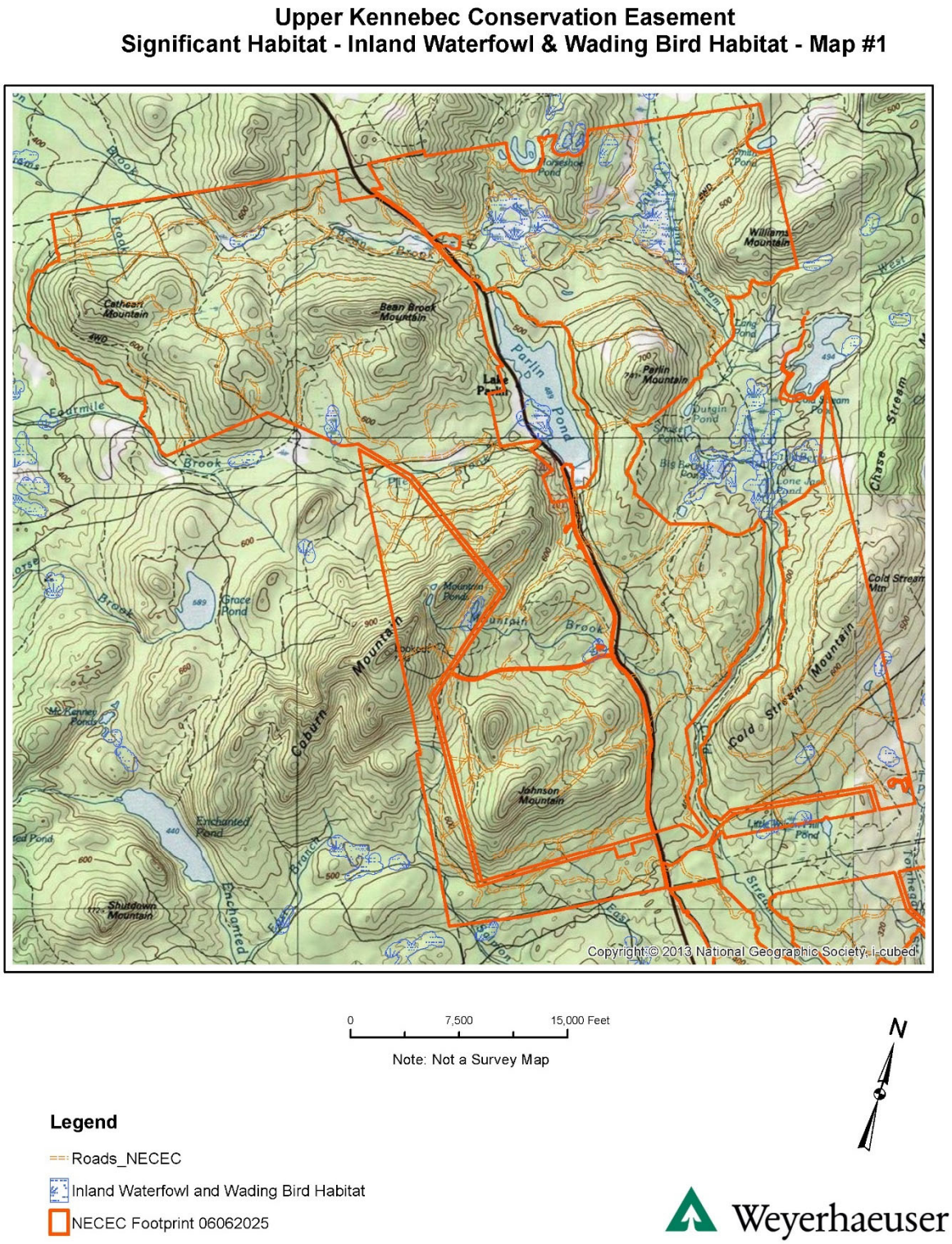
4.2 Buffer Zone Management

- Schedule harvesting during dry or frozen soil conditions and closely adhere to BMPs for water quality and wetland protection.
- Retain or manage a 100 to 250-foot variable edge buffer, depending on slope, soil type, and sensitivity.
- Promote multi-layered vegetation structure with a mix of conifers and hardwoods
- Maintain a well distributed overstory with >50% canopy closure in riparian corridors to preserve shade, temperature regulation, and nesting cover
- Protect downed woody debris and leave snags and live trees with cavities to support cavity nesting waterfowl and other wildlife species.

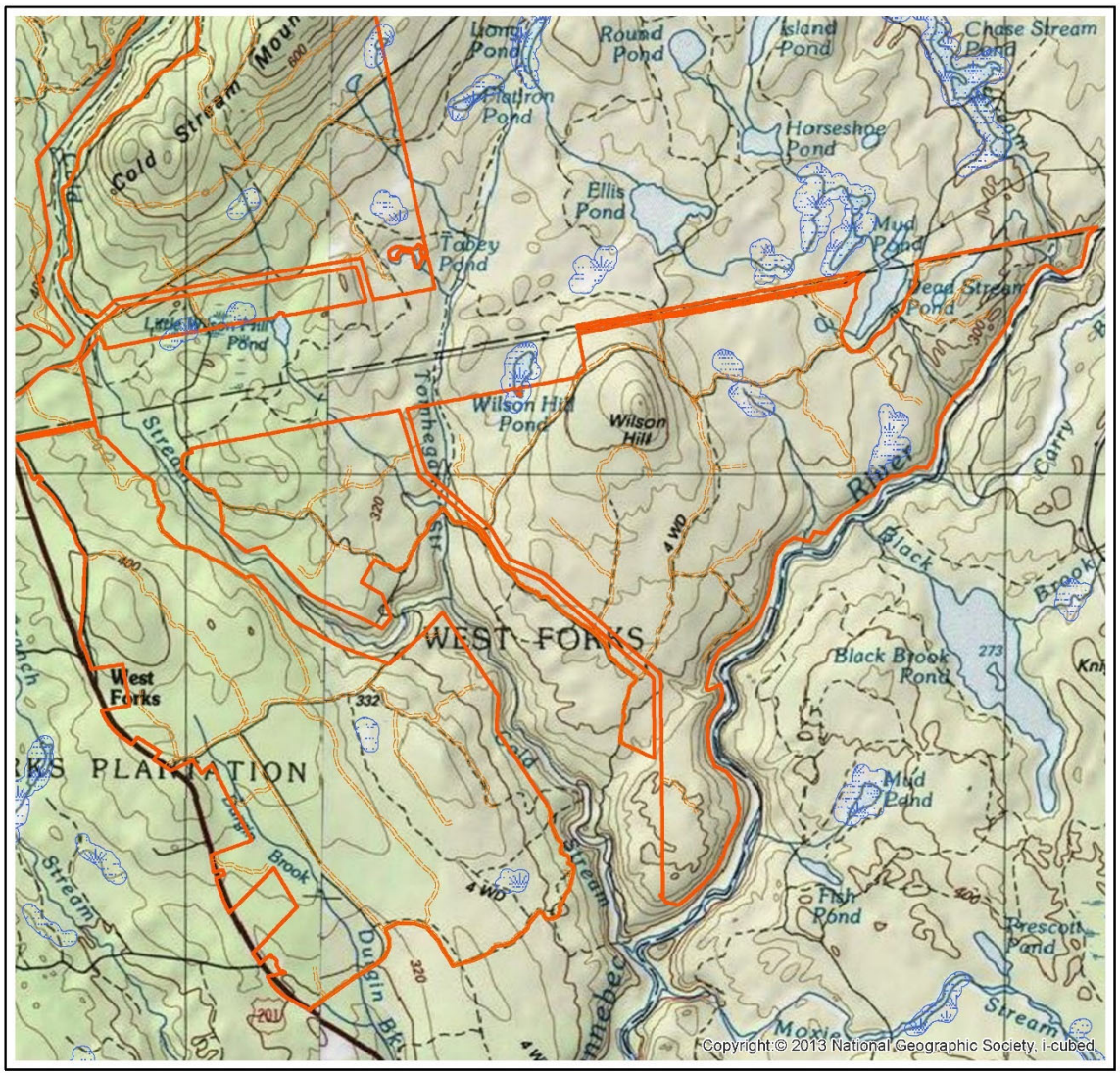
4.3 Seasonal Timing Restrictions

- Avoid harvest or ground disturbance within 100 feet of IWWH core areas identified in Figure 15 during the breeding season (April 15 – July 31). Consultation with MDIFW is required if unavoidable.

Figure 15. Inland Waterfowl & Wading Bird Habitat on the Protected Property



Upper Kennebec Conservation Easement
Significant Habitat - Inland Waterfowl & Wading Bird Habitat - Map #2



0 5,000 10,000 Feet

Note: Not a Survey Map

N

Legend

- Roads_NECEC
- Inland Waterfowl and Wading Bird Habitat
- NECEC Footprint 06062025

Weyerhaeuser

6.4.5 Aquatic Resources

Forest management activities around aquatic resources are governed by a combination of State regulations as required by Land Use Planning Commission (LUPC) and Best Management Practices as well as on the Protected Property by the 100 foot no-cut and 330 foot Mature Forest Buffers around perennial streams as outlined in this plan. In consultation with MDIFW, Aquatic Resources throughout the Protected Property were identified and suggested for further consideration as shown below.

State Heritage Fish Waters

1. **Introduction**

Waterbodies designated as State Heritage Fish Waters are critical lakes and ponds that support self-sustaining, high-quality populations of native wild brook trout. These waters are protected under Maine State law and require special consideration to ensure the long-term health of these sensitive ecosystems.

Brook trout require clean, cold, well-oxygenated water and are extremely sensitive to changes in riparian habitat, water quality and species composition. The following guidelines are designed to maintain or enhance water quality and habitat integrity in and around State Heritage Fish Waters.

There are five documented Heritage Fish Waters ponds totaling 51 acres on the Protected Property as shown in **Figure 16** and listed as follows:

- Markham Pond – 3 acres
- Mountain Pond #2 – 3 acres
- Little Wilson Hill Pond – 13 acres
- Tobey Pond – 11 acres
- Wilson Hill Pond – 21 acres

Brook trout likely continue to thrive in these ponds due to continued cooler water thermal regimes, lack of competing non-native or invasive fishes, and the adaptability/resilience of wild brook trout in the absence of those major stressors. An important note is that past harvesting practices have followed current forest regulations and have therefore protected these ponds allowing them to retain their status as Heritage Fish Waters.

2. **Management Objectives**

- Protect water quality and maximize buffer integrity.
- Maintain a functional, mature forested buffer around lakes and ponds that minimize soil disturbance and canopy loss in sensitive areas.
- To conserve the ecological values associated with these waterbodies.

3. **Management Guidelines**

Protection of Habitat: Forest management practices will minimize threats associated with environmental and land-based activities that pose direct and indirect adverse impacts to heritage fish, their habitat, and their food sources

- Establish a riparian buffer around all Heritage Fish Waters
- The ponds shown in Figure 16 will be buffered as described for Perennial Streams in Section 4.3.3. of this Forest Management Plan.
- For Heritage Fish Waters under 10 acres
    - Retain >60% of the basal area within 150 feet of the water body as mature forest to maintain shade, temperature regulation and nesting cover.
    - Adhere to LUPC Subdistrict rules for P-MA zones as required around Mountain Pond #2
    - Maintain an unharvested buffer zone of 100 feet from the high-water mark
    - Limit operation of heavy machinery within 100 feet of waterbodies except at designated crossings

- For Heritage Fish Waters over 10 acres
    - Retain >60% of the basal area within 250 feet of the water body as mature forest to maintain shade, temperature regulation and nesting cover.
    - Adhere to LUPC Subdistrict rules for P-GP, and P-MA if required.
    - Maintain an unharvested buffer zone of 100 feet from the high-water mark
    - Limit operation of heavy machinery within 100 feet of waterbodies except at designated crossings

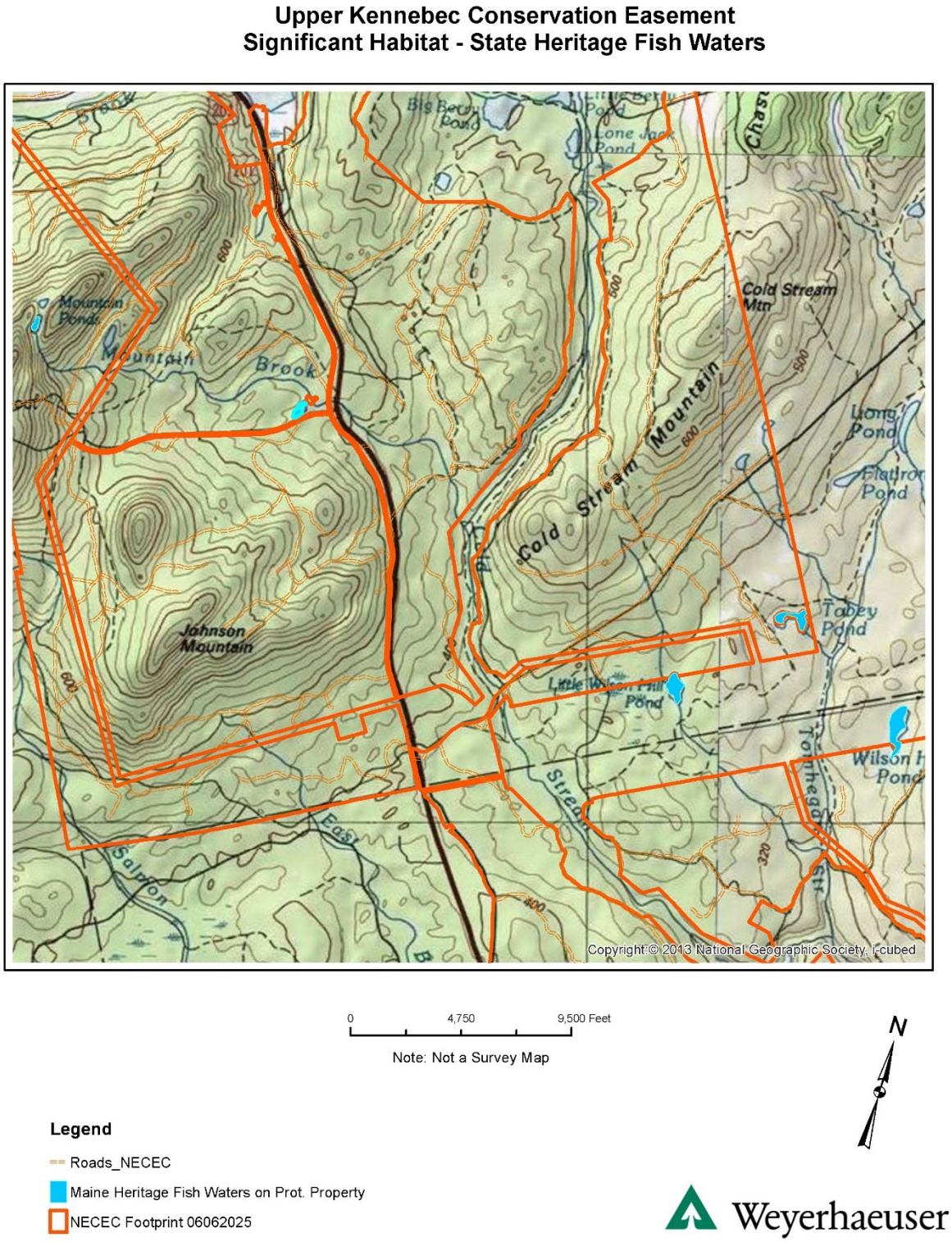
- Avoid new road construction within 250 feet of State Heritage Fish Waters unless no feasible alternative exists.

Protection of Water Quality: Forestry BMPs are crucial for protecting water quality during timber harvests. The intent is to minimize soil erosion and sedimentation, which can harm these sensitive aquatic habitats.

- Schedule forest management activities near these water bodies to take place outside the spring snowmelt and fall spawning periods.
- Conduct harvesting during frozen ground or dry conditions to reduce rutting and sedimentation risks.
- Implement BMPs such as waterbars, ditch turnouts, silt fencing, and regular road maintenance to prevent erosion issues and sediment delivery to streams.

Stream Crossings: Properly sized and installed stream crossings for forest roads and trails are essential for protecting water quality and allowing fish passage to upstream habitats. Adherence to standards and laws for placing wood into stream channels are important for protecting these cold-water fisheries habitats. Use bridges or open-bottom arch culverts where possible for stream crossings. Size crossings to accommodate 100-year flood flows and allow aquatic organism passage where possible.

Figure 16. State Heritage Fish Waters on the Protected Property



Riparian Buffers and Stream Crossings

The Protected Property contains numerous other lakes, ponds and streams that provide suitable habitat for cold water fisheries and other aquatic species. Proper riparian management is important for the protection of water quality and cooler temperatures, along with promoting the accumulation of coarse woody debris; all of which is vital to the many ecologies that require these inputs and conditions. Intact and well managed riparian buffers are also used as travel corridors for a variety of wildlife species. Forested buffers will be maintained along all perennial streams and wetlands to ensure the proper maintenance of these valuable habitats.

All forest management and road construction activities within the Protected Property, including stream crossing installation and maintenance, will utilize current Best Management Practices to avoid erosion, sedimentation, stream flow alterations and other impacts that would have an adverse impact on fish and other aquatic life.

The Protected Property has had active forest management activities conducted many times in the past. Given the terms as mandated by the Conservation Easement, the increased buffers on substantial miles of perennial streams will ensure that the waters on the Protected Property will continue to provide quality habitat for riparian species present today.

6.4.6 Other Species of Special Concern from Consultation with IF&W

MDIFW identified several potential Species of Special Concern that might be present on the parcel but haven't been documented due to limited formal surveys. Many of these species' needs are protected under the CE Riparian Habitat Management Standards or documented Species of Concern. Listed below are the identified potential species and how they will be addressed.

Bats

There are no known bat hibernacula or maternity roosts on the parcel. Bat hibernacula have already been addressed above. Maternity roost trees for many bat species are present on the landscape through retention of snags and other wildlife trees during forest management activities when safe to do so. The Riparian Habitat Management Standards will also provide future roosts in the 100 foot no harvest buffers and also within the 100-330 foot managed buffer maintaining mature forest. This variation will also provide different solar inputs on roost trees adding to the diversity of species that can find an appropriate roost site.

Great Blue Heron

There is a known historical Great Blue Heron colony east of the parcel in Misery Twp but none on the parcel. The adjacent colony is monitored annually for activity. If an active colony is discovered on the parcel (by the Grantor or other biologists), we will consult with MDIFW for management guidelines based on the best available science at the time.

Northern Bog Lemming

If any known occurrence is documented (by the Grantor or other biologists), we will consult with MDIFW for management guidelines based on the best available science at the time.

Blackpoll Warbler

Blackpoll Warblers and Bicknell's Thrush overlap in elevation, though Blackpolls may use older stands than Bicknell's for nesting. Timing restrictions on harvesting activities within identified Bicknell's Thrush habitat on Coburn Mountain will protect Blackpoll Warblers as well.

Northern Spring Salamander

Northern Spring salamanders occur in headwater streams with coarse substrates in deciduous and mixed wood forests. The Riparian Habitat Management Standards in the CE provide protection on perennial streams identified on the parcel. If a known occurrence outside of these buffers is documented, (by the Grantor or other biologists), we will consult with MDIFW for management guidelines based on the best available science at the time.

Wood Turtle

Wood Turtles prefer slow-moderate moving rivers and large streams in forested landscapes. There are no known occurrences and the Riparian Habitat Management Standards in the CE provide protection in alignment with the guidelines. If a known occurrence is documented, (by the Grantor or other biologists), we will consult with MDIFW about management guidelines based on the best available science at the time.

6.5 Invasive and Pest Species

As with any forest such as that found on the Protected Property, invasive species may be found from time to time. Invasive species are considered non-native organisms (insects, plants, animals, fungus, etc.) that, when introduced, cause or are likely to cause harm to the environment, economy, or human health. Examples of invasive insect and plant species that may be found over time in the Maine forests include Emerald Ash Borer, Browntail Moth, Spongy Moth, Bittersweet, Knotweed, as well as Phragmites and Aquatic Milfoil. Invasive species control involves prevention, early detection, and management through methods like mechanical, biological, and chemical treatments. Grantor will cooperate with agencies (e.g., MFS) in monitoring programs for invasive species (e.g., emerald ash borer). Controlling the introduction and spread of invasives can be done through both direct and indirect methods. Grantor will individually (and collectively with state and other partners) develop appropriate strategies at specific sites. Considerations for control may include:

- If the invasive site currently is or may in the future adversely impact forest regeneration.
- If the invasive site currently is or may in the future adversely impact a Threatened or Endangered species or Species of Concern site.
- If the invasives site is deemed appropriate and reasonable by Grantor to treat after consultation with state experts, as appropriate. Reasons for treatment may include forest regeneration, impacts to a specific special site, or to lessen spreading risk based on a landscape context for that specific invasive species.

Native species, such as the eastern spruce budworm, can also be pests of concern. The eastern spruce budworm is a native insect that periodically (roughly every 30 to 60 years) undergoes population outbreaks, causing extensive defoliation of spruce and fir trees. Upcoming outbreaks in Maine can often be forecast by monitoring in adjacent Southern Quebec. Effective management of spruce budworm in forestry involves a combination of proactive measures to mitigate its impact and maintain forest health. Key strategies to mitigate the risks of spruce budworm are monitoring and early detection, along with treatment of affected areas with an appropriate treatment, including insecticides such as tebufenozide (e.g., Mimic) and biological controls such as *Bacillus thuringiensis* (Bt). Joint efforts by multiple landowners, researchers, and agencies, such as the Maine Budworm Response Cooperative, Maine Forest Service, Maine Forest Products Council, and University of Maine's Cooperative Forestry Research Unit, can be and are utilized as effective strategies to share knowledge, research, and data. There are also several online GIS-based tools that can assist foresters in the early detection and identification of potential invasive insect and plant species.

6.5.1 Potential Forest Health Considerations

To expand upon these concepts, the following considers in more detail some potential threats to the forest health of the Protected Property and what current activities are occurring to further understand and potentially deal with these threats.

As noted, foresters are trained and responsible for field review of potential local forest health problems and concerns as they conduct their normal field duties. As part of any Integrated Pest Management (IPM) program, monitoring for early detection and tracking findings is critical to getting ahead of such concerns.

Below is a brief summary of the status of a few current threats that may impact the Protected Property through time.

Spruce Budworm

Weyerhaeuser's strategy to address the potential threat of this native insect is built around early detection, targeted intervention, and collaborative response. It aligns with broader regional efforts, including those led by the Maine Budworm Response Coalition, University of Maine, and Maine Forest Service.

Key components include:

1. Monitoring & Detection

- Weyerhaeuser participates in L2 monitoring (tracking overwintering larvae) across over 100 sites in Maine.
    - Of the 100 sites in Maine, three L2 monitoring sites fall within the footprint of the Protected Property while five more are within two miles of the Property.
- Collaboration with the University of Maine's Spruce Budworm Lab, ensures timely data collection and hotspot identification.

2. Early Intervention Strategy (EIS)

- EIS targets small SBW hotspots before populations reach outbreak levels.
- Insecticides like tebufenozide (Mimic) and biological controls such as Bacillus thuringiensis (Bt) are used to suppress larvae while minimizing harm to pollinators.

3. Silvicultural Adjustments

- Weyerhaeuser's internal plans recommend stand rotation and road upgrades to improve access and reduce vulnerability.

- Significant pre-salvage operations are not currently included in the SPW risk management strategy, as the planned EIS approach has demonstrated effectiveness in other regions. However, should substantial mortality occur in merchantable softwood stands—particularly those dominated by balsam fir—these areas will be prioritized for final harvest. This will support outbreak management and facilitate regeneration for the next rotation.
- The necessity and scope of any pre-salvage or salvage activities will be evaluated annually and communicated to the holder during the annual meeting. These assessments will consider ongoing progress toward the mature forest milestones outlined in the Conservation Easement.

4. Collaborative Partnerships

- Weyerhaeuser works with agencies like the Maine Forest Products Council, Maine Forest Service, and University of Maine's Cooperative Forestry Research Unit.
- Joint efforts include data sharing, research, and coordinated aerial spray programs

Emerald Ash Borer

The Maine Forest Service has established quarantine zones for the Emerald Ash Borer (EAB) that now include southern portions of Somerset County. The nearest detection was in Solon in 2025, about 30 miles south of the Protected Property. Currently Weyerhaeuser foresters continue to monitor for signs of this pest as instructed by the Maine Forest Service which also continues to monitor EAB using traps and bio-surveillance methods. In the event EAB is detected, Weyerhaeuser will engage the Forest Service and work to attempt to manage and limit the advancement of this invasive pest.

Beech Leaf Disease

As of 2025, Beech Leaf Disease (BLD) has been confirmed to be found in all counties in Maine, including southern Somerset County. This marks a significant expansion since its initial detection in 2021. While no detections have been reported north of the township of Cambridge, the rapid spread of this relatively new disease in Maine suggests that it is just a matter of time before it is present on the Protected Property.

BLD is caused by a microscopic nematode that overwinters in the buds of beech trees. Symptoms include dark bands on the leaves, curled and deformed leaves, and a diminished, thinning canopy due to premature leaf drop. Tree mortality tends to occur within 2–7 years, especially in smaller trees. Weyerhaeuser foresters are aware of the potential for this disease and will report sightings to the Maine Forest Service to aid in tracking and response.

Hemlock Wooly Adelgid

The Hemlock Woolly Adelgid (HWA) continues to expand its range in Maine, particularly in southern and coastal regions. As of the latest available data, HWA has not been confirmed in Somerset County, but it is approaching from the south and east. Vigilant monitoring is recommended especially in areas with naturally occurring eastern hemlock. The Maine Forest Service has put a quarantine in place that restricts the movement of hemlock nursery stock, logs, and other materials from infested to not yet infested areas. Regular monitoring of the advancement of this invasive pest is important, and Weyerhaeuser foresters are aware and on the lookout for the potential given the hemlock present on the Protected Property.

Forest Tent Caterpillar

The forest tent caterpillar (FTC) is a native defoliator of deciduous hardwoods in Maine, especially aspen, sugar maple, oak, and birch. In 2025, northern and central Maine experienced a continuing outbreak of FTC which was part of a broader regional cycle that began around 2022. Populations follow boom-and-bust cycles, with outbreaks every 10–15 years, lasting 2–5 years. FTC was the most commonly trapped moth in Maine in 2024, with over 1,100 specimens, indicating elevated population levels. Although numbers slightly declined in 2025, defoliation remained widespread. Most affected trees regrew leaves later in the summer, but repeated defoliation over multiple years can lead to reduced growth, increased susceptibility to pests, and tree mortality.

The Maine Forest Service emphasized natural population control via predators and parasites, especially the “friendly fly”, which surged in response to the outbreak. For severe infestations, Bacillus thuringiensis (Bt) can be used, especially on early instar larvae. Monitoring and detection of this native pest is important, and Weyerhaeuser foresters are aware and on the lookout for the potential for widespread defoliation on the Protected Property. In the event of moderate to heavy defoliation (>30%) Weyerhaeuser will consider intervention, especially if repeated over multiple years and will consult with the Holder in advance of implementation of an intervention strategy.

Invasive Plants

Two species of invasive plants that are most often or likely found on the Protected Property are Phragmites and Japanese Knotweed. While both are likely, there are only two documented locations of Phragmites on the edge of the Protected Property along the Mining Road, and no documented locations of knotweed.

Given the various modes of spread of invasive plants, it is quite possible if not likely that additional incidents of these or other invasive plant species could become established on the Protected Property. Foresters are aware of the potential and are trained to identify various species of invasive plants that may be found in the future and as noted previously, Weyerhaeuser has a process in place for documenting observations and locations of such species for interventions as needed.

6.6 Forest Chemical Use

Forest chemical use on the Protected Property will be for silviculture and pest control purposes.

For silviculture purposes, herbicides may be used to control competing vegetation in early stages of stand development, typically in recently established softwood stands. In some cases, herbicides may be used to address a reforestation issue, such as poor growing stock or inadequate stocking levels that may result from natural regeneration challenges.

Pesticides may be used to control insects, such as sawfly and spruce budworm, invasives, or other unforeseen future forest pests.

In all cases, any forest chemical use will be minimized to the extent practicable and strictly follow all State and Federal laws. In addition, all chemical use will adhere to all best management practices and protocols, label requirements, applicator licensing requirements, and current research.

6.6.1 Pesticide Program

The Pesticide Program includes both herbicide and insecticide use. The program emphasizes integrated pest management (IPM), compliance with company policies and standards, and thorough monitoring of pesticide applications to ensure effectiveness and to minimize environmental impact. All activities are overseen by licensed applicators and adhere to Maine Board of Pesticide Control regulations.

Insecticide Use

The last significant application of insecticides for insects in Maine occurred in the early 1990s for a sawfly infestation in spruce plantations. As of 2022, it is recognized that major infestations of the spruce budworm are in Quebec and New Brunswick and future management and control, including spraying, may occur in Maine within the next 10 years (cf. CFRU, MFS and MFPC data).

Weyerhaeuser's strategy to address the potential threat of spruce budworm is built around early detection, targeted intervention, and collaborative response as described elsewhere in this plan. Weyerhaeuser participates in L2 monitoring (tracking overwintering larvae) across over 100 sites in Maine, three of those sites fall within the footprint of the Protected Property. In the event this threat requires intervention for control, insecticides such as tebufenozide (Mimic) and biological controls such as Bacillus thuringiensis (Bt) may be used to suppress larvae. In the event this step is warranted, Weyerhaeuser will collaborate with the Holder to ensure that the requirements of the conservation easement are met.

Herbicide Use

Herbicide use focuses on managing competing vegetation in softwood plantations and naturally regenerating stands to enhance growth and stocking levels, with careful consideration of ecological and regulatory factors.

WY has paused its Maine planting and conifer release programs and is not planning any site preparation herbicide applications in the coming year. Silvicultural practices using herbicide is for one of three purposes:

1. Controlling competing vegetation in either (a) recently established softwood plantations to protect the investment of these plantations, or (b) softwood-dominated natural regeneration where softwood growth rates can be increased with removal of the hardwood competition. A "release spray" herbicide application would be prescribed in these situations following a site assessment of competing vegetation on a case-by-case basis.

2. To address a reforestation issue such as poor or unacceptable growing stock or inadequate stocking levels, both resulting from natural regeneration. A site preparation herbicide application would be followed by planting on a case-by-case basis.

3. To address the presence of invasive species such as phragmites or knotweed, spot treatments are employed to manage small sites of invasives, often found along forest roads or at landing areas. Spot treatments typically involve the targeted application of herbicides or manual removal of invasive plants at the identified sites, ensuring minimal impact on surrounding native vegetation. Foresters are trained to identify and document these incident sites, recording GPS locations and detailed observations, which they then submit to the company staff biologist. After receiving incident reports from foresters, the staff biologist reviews the data and schedules treatment activities, sometimes involving additional field assessments to determine the most effective approach to prevent further spread.

In order to be consistent and have well trained and informed participants in any herbicide applications, Weyerhaeuser developed an Herbicide Application Manual that has been in place and regularly updated for the aerial application of chemicals. In the event such applications are warranted in the future, this manual will serve as an invaluable tool, outlining proper application methods to ensure safety and environmental integrity. A copy of this manual can be provided to the Holder upon request should aerial herbicide applications resume.

Spot herbicide applications have been conducted in the past to address incidents of invasive species such as Japanese knotweed and Asiatic Bittersweet using over the counter herbicides when small, isolated incidents of invasives have been located. In the event more significant

herbicide use becomes a need in the future, Weyerhaeuser will inform the Holder of such applications.

Pesticides - Process/Procedures

As noted above, Weyerhaeuser has no current plans for the use of insecticides or for conducting site prep aerial applications of herbicides for conifer release. In the event applications become warranted, use will be minimized to the extent practicable and only chemicals licensed by the EPA and registered for use in Maine will be used for such purposes. Weyerhaeuser will follow all Maine Board of Pesticide Control rules and regulations including the use of licensed pesticide applicators in good standing. For aerial herbicide applications, Weyerhaeuser's Maine Herbicide Manual as noted previously will be strictly followed. All chemical use will adhere to best management practices and protocols, label requirements and will be based upon the latest and most current research. The Holder will be notified in the event that pesticide use becomes a need in the future for the Protected Property.

6.7 Climate Change

Climate change increases uncertainty about future forest conditions. A changing climate will likely affect tree growth rates, mortality, disturbance patterns and the distribution of tree species after disturbances. Models suggest that we will experience shifts in the ranges of trees and other plants, animals, and pests. More frequent extreme wildfires and weather events will lead to altered disturbance regimes and will necessitate adjustments in forest operations and planning. Management aimed at addressing these uncertainties must change over time with the best available science.

Detailed below are key risks identified and Grantor's plan to address:

- Risk: Decreased forest health & productivity due to increased invasive insect species, diseases & pathogens, and tree stress from less-than-optimal growing conditions resulting from changing precipitation and/or temperature patterns.
    - Increase forester awareness of forest health issues, discovery and monitoring of new issues, coordination of reporting and information exchange with state and academic partners, and research collaboration.
    - Maintain complex forest structure, diverse forest composition, healthy soils, and address invasive species as appropriate.

- Risk: Damage to company infrastructure such as roads and stream crossings from changing precipitation patterns and extreme weather events.
    - When constructing new or replacing existing stream crossings, size the new structure according to Stream Smart principles to address future likely increased water flows.
    - When building new or upgrading legacy roads, address future potential increased water flows by installing adequate drainage such as the proper size and spacing frequency of cross-drain culverts.

- Risk: Increased concern for water resources (quantity and quality) from changing precipitation patterns and wildlife species from changing habitat.
    - Implement BMPs to address water quantity and quality issues as precipitation patterns change or extreme weather events increase.
    - Train foresters and logging/road contractors in BMP implementation that includes climate smart practices.
    - Collaborate on related research and new tool development and incorporate shared learnings into our practices.

- Collaborate with third parties to upgrade stream crossings beyond our own road program capabilities.
- Provide diverse forest structure, forest composition, habitat structures like legacy trees, and snags, special site protections, threatened & endangered species conservation, healthy soil and water bodies (wetlands, riparian areas, vernal pools, ponds, etc.) at the connected landscape level to maintain biodiversity resilience into the future.

- Risk: Increased wildfire risk due to changing precipitation patterns.
  - Increase coordination with state agencies responsible for fire responses.

Climate change effects may impact the growth models used as a basis for establishing the Mature Forest Habitat projections set forth in this FMP, including the ten-year Milestones anticipated to be achieved, as described in Section 4.1. The Grantor will evaluate the potential impacts of climate change on the Mature Forest Habitat projections and will be prepared to present such impacts as may be necessary during annual meetings with Holder. If any given Milestone is not met due to climate change impacts (such as "Force Majeure Events" described in Section 4.4.3 - hurricane, fire, flood, drought, disease, or forest health pest outbreak), Grantor and Holder agree to mutually discuss solutions.

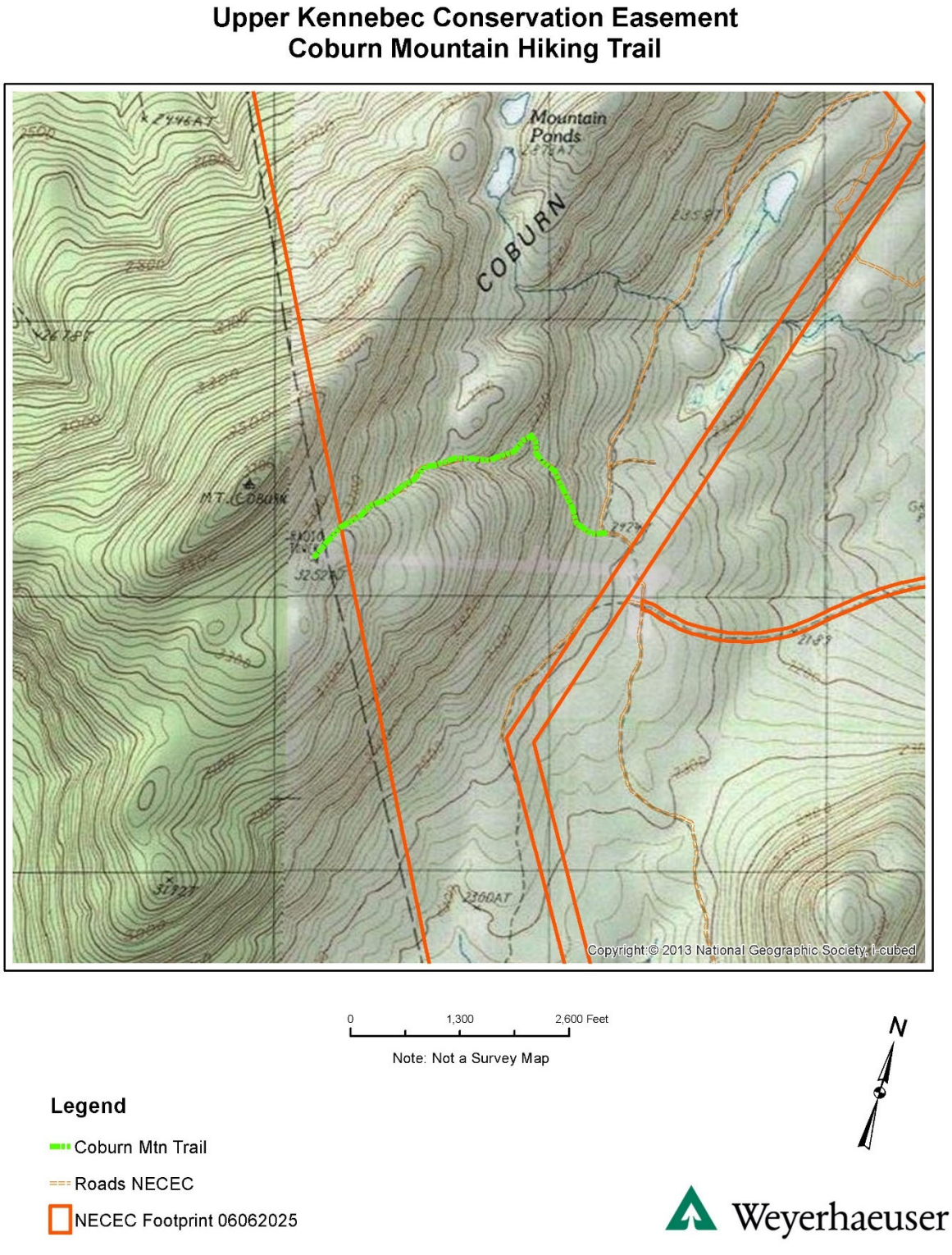
6.8 Recreation

Access for recreation, including rules and regulations, is addressed above in Section 5.7.

Description and Mapping of Known Recreational Spots and Trails:

There are no designated hiking trails on the Protected Property. There is one unofficial hiking trail located in Johnson Mtn Township near the base of the former Enchanted Mtn Ski Slope. The approximate location of the trail is mapped in **Figure 17**. The trail is located on a former logging access road on the toe slope of Coburn Mountain and is unimproved and unsigned.

Figure 17. Coburn Mountain Trail in Johnson Twp on the Protected Property



7.0 Regulations Applicable to the Protected Property

There are several state and federal laws that apply to forest management activities within the State of Maine. Weyerhaeuser requires strict adherence to the various requirements of the following regulations in all forest management activities on Maine timberlands. Weyerhaeuser monitors these laws and regulations for change and works to ensure company forest managers have the information and tools they need to understand and adhere to these requirements.

7.1 Forest Licensing Law

This law requires that any individual hired to provide professional forestry services, such as creating a management plan or overseeing a harvest, must be licensed by the state. Weyerhaeuser employs licensed professional foresters to manage all company timberlands, including the Protected Property in Maine.

7.2 Tree Growth Tax Law

The Protected Property is enrolled in the Tree Growth Program and current plans are valid through 2027. Maine's Tree Growth Tax Law offers property tax relief for landowners who manage their forested land for commercial timber production, allowing it to be valued for its current use rather than its potential development value. To qualify, land must be used for a commercial forestry enterprise, and landowners must notify the town or state assessor and meet specific acreage and management requirements. Property owners pay an annual excise tax at a set rate per acre and face penalties if they withdraw land from the program.

This law is a tax program that provides for the valuation of forestland based on its productivity value, rather than its market value, for property tax purposes. To qualify for this tax treatment, landowners must:

- Maintain a minimum of 10 forested acres.
- Have a management plan developed or reviewed and approved by a licensed forester.
- Actively practice forestry on their land.

7.3 Protection and Improvement of Waters Law

The Maine Protection and Improvement of Waters law (Title 38, Chapter 3 of the Maine Revised Statutes) complements the federal Clean Water Act (CWA) by providing a state-specific framework that aligns with and expands upon federal water quality goals. This law and the Erosion and Sedimentation Control Act require all landowners to protect water quality during forest operations. The law works in conjunction with other state regulations, such as the Maine Forest Practices Act, to prevent water pollution and protect water quality during timber harvesting and other forest operations.

Key aspects of forest management covered by the law:

- Protection of water bodies: Forest operations are regulated to prevent erosion and sedimentation that can harm water quality in protected areas, including rivers, streams, brooks, and wetlands.

- Shoreland Protection: Timber harvesting is also regulated by Statewide Standards for Timber harvesting in Shoreland Areas, expanded upon below.

7.4 State of Maine Forest Practices Act, 12 MRS §§ 8866 et seq.

Forest management is governed by a combination of state and federal regulations designed to ensure sustainable practices, protect natural resources, and preserve wildlife habitat. The most significant state-level law is the Maine Forest Practices Act, overseen by the Maine Forest Service MFS).

The Maine Forest Practices Act is found within **Title 12, Part 11, Chapter 805, Subchapter 3-A** of the Maine Revised Statutes. The law is officially titled "Forest Harvest Regulations" and is managed by the Maine Forest Service (MFS). This law mandates specific standards for commercial timber harvesting, particularly to prevent "liquidation harvesting," where timber is rapidly harvested with no plans for regeneration.

Administrative rules under the Forest Practices Act cover forest operations, with a focus on clearcutting, forest regeneration, and activities in sensitive shoreland areas.

The primary rules include:

- **Chapter 20 Rule: Forest Regeneration and Clearcutting Standards**: This rule governs performance standards for clearcuts, including size limitations, separation zones, and requirements for regeneration following a harvest.
    - **Clear-cut definitions**: A clear-cut is defined as timber harvesting on a forested site greater than 5 acres that results in a residual stand density below a certain threshold. Timber harvesting operations that create clear-cuts of over 5 acres must meet performance standards regarding size, separation zones, and regeneration.
        - Separation zones: Clear-cuts must be separated from one another by forested separation zones to limit the overall size of harvested patches.
    - **Forester involvement**: A Licensed Forester must prepare harvest plans for clearcuts larger than 20 acres. For larger clearcuts (Category 3, greater than 75 acres), the plan must be submitted to the Maine Forest Service for approval 60 days in advance.

- **Regeneration requirements**: There must be adequate regeneration of trees within five years after harvesting. After a clear-cut, the harvested site must be regenerated to a new stand of trees that meets specific density and height requirements.

- **Chapter 21 Rule: Statewide Standards for Timber Harvesting and Related Activities in Shoreland Areas**: This rule provides specific regulations for forest management activities within Maine's protected shoreland zones, which include areas near lakes, ponds, rivers, streams and wetlands, to protect water quality and minimize soil erosion. Key requirements include:

    - Vegetation clearing limits: Strict limits are placed on the amount of tree clearing allowed within the shoreland zone to maintain water quality and habitat.

    - Erosion control: Landowners must take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected resource. The expectation is that BMPs will be put in place in advance and will be utilized during project activities.

- **Chapter 26 Rule: Forest Operations Notification Standards**: Landowners or their agents must notify by filing a Forest Operations Notification with the Maine Forest Service before beginning any timber harvesting activities; Notification must be posted at the harvest site during the harvest activities. Landowners who file a notification are required to submit an annual report of their harvesting activities to the MFS by January 31st of the year following activities.

- **MFS Chapter 27 Rules: Timber Harvesting and Related Activities in Unorganized Areas**: This rule specifically regulates timber harvesting and forestry-related activities and sets standards for operations specifically within the unorganized territories, operating as a set of specialized rules within the broader framework established by Chapter 10. Chapter 27 focuses exclusively on the specifics of timber harvesting, land management roads, and gravel extraction for forestry purposes.

- **Other applicable laws**: All harvesting activities must also comply with other relevant federal, state and local laws, rules and any town ordinances.

7.5 LUPC Chapter 10 – Land Use Districts and Standards

Maine's Land Use Planning Commission (LUPC) Chapter 10, "Land Use Districts and Standards," contains the comprehensive administrative rules that govern land use activities and zoning in the unorganized areas of the state such as the Protected Property covered by this forest management plan. It is the primary document used to determine what is and is not permitted within specific

land use subdistricts. Chapter 10 sets the overarching land use standards, including zoning districts and rules for a wide range of activities in the unorganized territories.

LUPC Chapter 10 is used in conjunction with MFS Chapter 27 whereby LUPC Chapter 10 defines *where* forest management can occur, and MFS Chapter 27 defines *how* the specific forestry activities are to be conducted.

7.6 Federal Regulations Influencing Forest Management in Maine

Federal regulations influencing Maine's forest management include the Endangered Species Act (ESA), which protects threatened and endangered species and their habitats, and regulations under the Clean Water Act (CWA) that govern water quality in forests as noted previously.

Here's a breakdown of the key federal laws:

- **Endangered Species Act (ESA) of 1973:** The Endangered Species Act establishes protections for fish, wildlife, and plants that are listed as threatened or endangered; provides for adding species to and removing them from the list of threatened and endangered species, and for preparing and implementing plans for their recovery; provides for interagency cooperation to avoid take of listed species and for issuing permits for otherwise prohibited activities; provides for cooperation with States, including authorization of financial assistance;
    - **Purpose:** To prevent the extinction of endangered plants and animals and to recover their populations.

- **Clean Water Act (CWA):** The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

  Under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry. EPA has also developed national water quality criteria recommendations for pollutants in surface waters.
    - **Purpose:** To maintain the quality of the nation's waters.

8.0 Annual Meeting

The Grantor and Holder agree to hold an Annual Meeting in order to facilitate effective communication and to ensure a shared understanding of the status of the forest condition as it relates to the mature forest and perennial stream management requirements. The Holder will be responsible for scheduling the meeting prior to March 30th each year. The Annual Meeting will report on the following:

1. Current Mature Forest Percentage
2. Mature Forest Percentage in Strategic Harvest Plan in 2065
3. Forest Health and Climate Change concerns – Observed/Anticipated
4. Holder monitoring activities and Findings for the previous year
5. Harvest activities – previous 12 months
6. Current planned harvest activities, subject to change – next 12 months
7. Perennial Stream Crossings
    a. Previous year – actual
    b. Current year – planned
8. Perennial Stream Mapping Review:
    a. Review of any natural stream channel movement over time of the 88 miles of perennial streams in BDR with corresponding GIS update.
9. Forest Management Activities within Mature Forest Buffers - Previous year and Current year planned
    a. 0-100 foot
    b. >100 to 330 foot

9.0 Figures, Tables and Maps

9.1 List of Figures and Maps

9.2 List of Tables

Appendices

A. Conservation Easement
B. Definitions
C. Protected Property
D. Kennebec River Watershed Map
E. Soils Maps and Map Unit Details
F. Forest Management Roads and Landings
G. Best Management Practices (BMP) Standards
H. Forest Inventory Procedure and Design
I. MFS Chapter 21 Rules – SWS for Timber Harvesting in Shoreland Areas
J. Cold Stream Rights of Way Access

Appendix A: Conservation Easement

NEW ENGLAND CLEAN ENERGY CONNECT SEGMENT 1 CONSERVATION EASEMENT

I. PROJECT NAME

New England Clean Energy Connect Segment 1 Conservation Easement

II. WORDS OF CONVEYANCE

Weyerhaeuser Company, having an address of 220 Occidental Avenue South, Seattle, WA 98104, (referred to as the "Grantor", which word shall, unless the context clearly indicates otherwise, include the above-named Grantor, its successors and assigns), for consideration paid and not as a gift, HEREBY GRANTS to the **STATE OF MAINE, acting by and through its Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands** (the "State," which word shall, unless the context clearly indicates otherwise, include the State's successors and assigns, or "Holder"), a governmental entity having a mailing address of 22 State House Station, Augusta, Maine 04333 with QUITCLAIM COVENANT:

A. in perpetuity, the following described conservation easement (the "Conservation Easement" or the "Easement") on, over, under, and across the real property in Bradstreet Township, Parlin Pond Township, and Johnson Mountain Township, Somerset County, Maine, more particularly described in Exhibit A, subject to those exceptions to title set forth therein (the "Protected Property"), and generally depicted on the plan attached hereto and made a part hereof as Exhibit B as set forth below. Provided that within twenty-four months of the conveyance of this Conservation Easement from Grantor to Holder, a boundary line survey shall be completed of the Protected Property that also depicts any and all of the then-existing following located on the Protected Property: rights-of-way, roads, and structures and other improvements. Said survey shall be recorded as soon as practicable after completion and, upon recording, shall be incorporated herein and act as an amendment to this Conservation Easement to replace Exhibit B;

B. non-exclusive easement for Holder's pedestrian and vehicular access to the Protected Property as necessary or appropriate to exercise Holder's rights of monitoring and enforcement of the Easement hereunder, over:

    1. any and all rights-of-way and roads owned by Grantor, as more particularly described in Exhibit A and depicted on Exhibit B; and

2. any and all rights-of-way and roads owned by third parties over which Grantor has rights of access to the Protected Property to the extent that Grantor has the right to grant the same.

C. a non-exclusive right of public pedestrian access on and across the Protected Property for purposes of Non-Intensive Outdoor Recreation.

Grantor further HEREBY GRANTS to the **STATE OF MAINE, acting by and through its Department of Environmental Protection**, a governmental entity having a mailing address of 17 State House Station, Augusta, Maine 04333, third party enforcement rights of the Conservation Easement as set forth in Section X.

III. DEFINITIONS

A. "Alternative Qualified Holder" is defined in Section XI.B.
B. "Baseline Documentation" is defined in Section VII.A.5.
C. "Best Management Practices" are those forest management practices set forth in the publication entitled "Best Management Practices for Forestry: Protecting Maine's Water Quality," prepared by the Maine Department of Agriculture, Conservation and Forestry, Bureau of Forestry, in such publication's current version at the time of the grant of this Conservation Easement, and as the same may be further amended, supplemented, or replaced after the date of this grant.
D. "Commercial Forest Management Activities" include Commercial Forestry and timber cruising; resource evaluation; herbicide, pesticide, and fertilizer application; timber stand improvement; pruning; mechanical timber harvesting and other forest harvesting; wood chip production; forest products transportation; natural regeneration of forest stands; prevention of fire and disease; eradication of invasive species; wildlife habitat improvement; general maintenance of forest health and biological diversity; maple sugaring; forest carbon sequestration; forest carbon credit sales (consistent with Section VII.A.4); other substantially similar and associated activities; and the construction, creation, use, and maintenance of Land Management Roads, skid trails and Winter Haul Roads, turnouts, timber landings, and crossings of flowing waters for such purposes, all as consistent with the terms of this Conservation Easement.
E. "Commercial Forestry" is defined as the planting, growing, cultivation, stocking, and harvesting of trees and other forest products to produce marketable forest products.
F. "Conservation Plan" is defined in the Maine Department of Environmental Protection ("MDEP") Findings of Fact and Order, issued May 11, 2020, and the Maine Board of Environmental Protection ("MBEP") Findings of Fact and Order, issued July 21, 2022.
G. "Conservation Values" are defined in Section V.
H. "Forestland" is defined as land stocked with trees of any size or land formerly having had such tree cover that is being managed to return to forest cover.
I. "Force Majeure Event" is defined in Section VII.A.6.
J. "Forest Management Plan" is defined in Section VII.A.6.a.
K. "Grantor" is defined as the owner in fee simple of the real property that is subject to this Conservation Easement. The term "Grantor" shall include Grantor, its successors and

assigns, and their respective authorized agents, contractors, and employees, and where specifically set forth herein, licensees, and lessees of Grantor, its successors and assigns.

L. "Land Management Road" is defined as a route or track consisting of a bed of exposed mineral soil, gravel, or other surfacing material constructed for, or created by, the repeated passage of motorized vehicles and used primarily for forest management activities (refer to Exhibit C), but such definition does not include log landings, skid trails, skid roads, and Winter Haul Roads.

M. "Mature Forest" is defined as a forest stand consisting of a mix of native species with a minimum basal area of 80 square feet per acre of live trees at least 4.5 inches in diameter at breast height, including a minimum basal area of 60 square feet per acre of live trees at least 50 feet tall, accompanied by the presence of representative levels of well-distributed standing dead and downed trees.

N. "Mature Forest Goal" is defined in Section VII.A.6.

O. "Milestones" is defined in Section VII.A.6.

P. "MNAP" means the Maine Natural Areas Program, which is part of the Maine Department of Agriculture, Conservation and Forestry, or any successor State program or bureau that performs similar public functions.

Q. "MDIFW" means the Maine Department of Inland Fisheries and Wildlife, or any successor State agency or bureau that performs similar functions.

R. "NECEC" is defined as the New England Clean Energy Connect Transmission Line that runs from the Canadian border in Beattie Township, Maine to the point of interconnection to the New England power grid in Lewiston, Maine.

S. "Non-Intensive Outdoor Recreation" is defined as dispersed, non-commercial, non-exclusive, non-motorized individual or small group recreational activities that do not generally rely on buildings or spectator facilities. Such uses include hunting, fishing, trapping, hiking, nature observation, picnicking, boating, cross country skiing, snow-shoeing, dog sledding, bicycling (including electric bicycles), horseback riding, swimming, primitive non-commercial camping, and outdoor education and nature study, and enjoyment of open space; provided that the incidental use of the Protected Property by the public for these purposes supported by paid guides or outfitters is not commercial or exclusive use. The establishment by Grantor of permits and collection of access fees for use of campsites and other recreational facilities permitted under this Conservation Easement is also not commercial or exclusive use.

T. "Normal high watermark of the shore" is defined as that line on the shore of water bodies which is apparent from visible markings, changes in the character of the soils due to the prolonged action of the water or changes in vegetation, and which distinguishes between predominantly aquatic and predominantly terrestrial land. In places where the shore or bank is of such character that the high watermark cannot be easily determined (rockslides, ledges, rapidly eroding or slumping banks), the normal high watermark will be estimated from places where it can be determined by the above method. Distances from the normal high watermark will be determined by horizontal measurement.

U. "Permitted Excavation Activities" is defined in Section VII.D.3.

V. "Plantation" is defined as stands that are artificially regenerated via intentional planting methods.

W. "Protected Property" is defined in Section II.A.

X. "Productive Forest Acres" are defined as any area capable of growing a crop of trees that can reach Mature Forest conditions. These areas will generally have a site index of 40 or greater or, at a minimum, the ability to support trees greater than 50 feet in height.

Y. "Riparian Habitat Management Standards" are those standards for riparian areas contained in Section VII.A.6.

Z. "Segment 1" is defined as the portion of the NECEC that runs from Beattie Township, Maine to The Forks Plantation, Maine.

AA. "The Order" is defined as the MDEP Findings of Fact and Order, issued May 11, 2020, permitting construction of the NECEC, and the MBEP Findings of Fact and Order, issued July 21, 2022, affirming and amending the May 11, 2020, MDEP Findings of Fact and Order.

BB. "The Parties" is defined as Grantor, Holder, and MDEP, for third party enforcement purposes.

CC. "Wetland" means any area saturated or inundated by water at a frequency or for a duration sufficient to support, and which under normal circumstances does support, vegetation typically adapted for life in saturated soils. In most cases, this would include areas below a recognizable debris line resulting from recurring, not extreme, water action. The "upland edge" of a wetland is the boundary between the upland and wetland, and not the edge of open water. Refer to Exhibit D for a map of wetlands and streams existing at the time of recording this Easement.

DD. "Winter Haul Road" means a route or travel way that is utilized for Commercial Forest Management Activities conducted exclusively during frozen ground conditions. Winter Haul Roads must follow applicable Best Management Practices.

IV. PURPOSES

The purposes of this Conservation Easement (the "Conservation Purposes") are to conserve in perpetuity habitat in the vicinity of NECEC Segment 1 with sufficient Mature Forest acreage to mitigate and offset the effects of habitat fragmentation associated with the construction and maintenance of NECEC Segment 1, including the related edge effect; to promote habitat connectivity and conservation of Mature Forest areas; and to provide conservation compensation for the NECEC.

The Conservation Purposes of this Conservation Easement are also to ensure the forests on the Protected Property are managed to maintain a healthy, biologically diverse, productive, and Mature Forest with diverse age classes; to conserve in perpetuity the Conservation Values of the Protected Property including wildlife and ecological values; to conserve water quality, wetlands, and riparian values; and to provide guaranteed access to and use of the Protected Property by the general public for Non-Intensive Outdoor Recreation.

Grantor covenants that no acts or uses that are inconsistent with the Conservation Purposes shall be conducted on the Protected Property.

V. RECITALS

The following recitals (the "Recitals") more particularly describe the conservation attributes and Conservation Values of the Protected Property and the significance of this grant:

WHEREAS, Grantor is the sole owner in fee simple of 50,063 +/- acres of real property in Somerset County, as the same is described in Exhibit A, and wishes to convey a Conservation Easement over the 50,063 +/- acre Protected Property, which consists of substantially undeveloped forested land;

WHEREAS, the Protected Property is in the vicinity of Segment 1;

WHEREAS, in connection with the NECEC, the MDEP and the MBEP issued the Order;

WHEREAS, because of the impacts of the NECEC, the Order requires NECEC Transmission LLC to permanently conserve 50,000 acres of land in the vicinity of Segment 1 to, among other things, ensure the protection of wildlife;

WHEREAS, the Order requires NECEC to create and implement a Conservation Plan, as described and defined in the Order;

WHEREAS, the Conservation Plan has as its primary goal compensation for the fragmenting effect on habitat of the NECEC, and the related edge effect, by promoting habitat connectivity and conservation of Mature Forest areas;

WHEREAS, the Order allows commercial timber operations on the Protected Property provided that such operations are consistent with the conservation of Mature Forest areas;

WHEREAS, the Protected Property is desirable for conservation in furtherance of the goals of the Conservation Plan and includes the following conservation values to be conserved (collectively, the "Conservation Values"):

a. The Protected Property is a predominately forested land area of significant breadth and diversity, with outstanding values including sizeable Mature Forests, large blocks of wildlife and plant habitat, rare, threatened, and endangered species and their associated habitat, extensive bogs, wetlands, rivers, streams, lakes, remote ponds and other water bodies, and unique natural features, all of which are further quantified and delineated in the Baseline Documentation.

b. The Protected Property has ecological importance as wildlife and fisheries habitat. Conservation of the Protected Property under the terms of this Conservation Easement, by prohibiting development of the Protected Property in excess of that allowed under this Conservation Easement, will have a permanent, beneficial impact on the ecological benefits of such areas and species.

c. The Protected Property provides habitat that is suitable for diverse wildlife species of conservation interest, including mammals such as pine marten and white-tailed deer, as well as brook trout, landlocked salmon, other fish, and many species of forest interior dwelling birds, waterfowl, reptiles, and amphibians.

d. The Protected Property contains identified recreational areas important to the people of the State of Maine, and guaranteed access to and use of the Protected Property by the general public for Non-Intensive Outdoor Recreation in perpetuity, consistent with the preservation and protection of the other values of the Protected Property and Grantor's reserved rights, is in the public interest;

WHEREAS, subject to the terms of this Conservation Easement and an approved Forest Management Plan, the continued management of the Protected Property as a dynamic landscape at different stages of growth, ages, and composition to develop and conserve Mature Forest is compatible with the preservation and promotion of habitat connectivity, minimizes fragmentation of forest ecosystems, and provides more permanent forest and habitat resiliency;

WHEREAS, pursuant to 33 M.R.S. § 476(2)(A) and 12 M.R.S. § 1850(1), Holder may acquire and hold a conservation easement on the Protected Property, which conservation easement is a component of the Conservation Plan required by the Order;

WHEREAS, the Parties have prepared and completed the Baseline Documentation at the time of the recording of this Conservation Easement, which, in accordance with Section VII.A.5, is intended to serve as an objective, although not exclusive, information baseline for monitoring compliance with the terms of this Conservation Easement;

WHEREAS, the Parties desire to implement certain restrictions on the use of the Protected Property, impose obligations on Grantor and any future owners of the Protected Property, and grant rights to Holder, and the MDEP, with respect to the Protected Property, in perpetuity, as set forth in this Conservation Easement; and

WHEREAS, the MDEP, has approved this Conservation Easement by order dated _____.

VI. INCORPORATION OF PURPOSES AND RECITALS

NOW THEREFORE, in consideration of the foregoing Conservation Purposes and Recitals, and for the benefit of the public, the Parties have established this Conservation Easement on, over, under, and across the Protected Property consisting of the following terms, covenants, and restrictions, which shall run with and bind the Protected Property in perpetuity.

VII. RESTRICTIONS AND RESERVED RIGHTS

Except for the rights expressly conveyed by this Conservation Easement to Holder (hereinafter "Holder's Affirmative Rights"), and except for the restrictions stated in this Conservation Easement, Grantor retains all ownership rights in the Protected Property and may use the Protected Property for any lawful purpose, including, without limitation, those uses expressly reserved by Grantor herein (hereinafter "Grantor's Reserved Rights"), provided that any such use is consistent with the Conservation Purposes of this Conservation Easement. Any activities on or uses of the Protected Property that are inconsistent with the Conservation Purposes are prohibited. Without limiting the generality of the foregoing, the following restrictions and other terms are applicable to the Protected Property.

A. LAND USE

1. **Limitations on Development; Exceptions.** Residential, industrial, and commercial activities and development, quarrying, mining, mineral development, alteration of watercourses and water bodies, and building development activities are prohibited on the Protected Property, except as permitted for the authorized uses in this Conservation Easement, including but not limited to: Commercial Forest Management Activities (see Section VII.A.6), Permitted Excavation and Use of Gravel, Sand, and Rock, (see Section VII.D.3), Ecosystem Service Markets (see Section VII.A.4), Forest and Vegetation Management (see Section VII.E), Incidental Operations (see Section VII.E) and for the enhancement of Non-Intensive Outdoor Recreation as defined herein and other activities expressly permitted by this Conservation Easement or reserved by Grantor.

   Without limiting the generality of the foregoing restriction, except as currently exists as reflected in the Baseline Documentation, residential housing units, condominiums, trailer parks, mobile homes, high-intensity lighting, motels or hotels, commercial advertising, billboards, towers, antennas or equipment for telecommunications or radar, solar power or wind power structures or transmission lines, and use of the Protected Property as an aircraft landing site except in an emergency, are all specifically prohibited.

2. **Storage and Disposal of Waste; Organic Matter; Hazardous Substances Associated with Commercial Forest Management.** Discharge of wastewater into surface or ground waters on or under the Protected Property is prohibited. It is forbidden to dispose of, or store, on the Protected Property, rubbish, garbage, building debris, unserviceable vehicles and equipment or parts thereof, hazardous or other waste, hazardous or toxic substances, or other unsightly or offensive waste material. Except that organic matter and logging slash generated on the Protected Property, but not elsewhere, may be used, stored, or disposed of on the Protected Property as part of Commercial Forest Management Activities. Other waste generated by permitted uses on the Protected Property may be stored temporarily in appropriate containers for removal at reasonable intervals, all in accordance with applicable state, local, and federal law. Notwithstanding the foregoing, fuel and other hazardous or toxic substances used in the ordinary course of conducting Commercial Forest

Management Activities on the Protected Property may be stored thereon in accordance with applicable state, local, and federal laws and regulations.

3. **Limitations on Additional Easements and Other Rights.**

   (a) Access and Utility Easements. With respect to State Route 201, Holder may provide its prior written approval if such easement rights minimize adverse impacts to the Conservation Values and Holder determines that such easement rights are: (1) necessary for the Maine Department of Transportation to comply with federal or state law or (2) necessary for public safety.

   (b) Leases and Licenses. No new leases, licenses, or other interests in land that establish a right-of-way, corridor of ingress or egress, driveway, road, utility distribution or service line, or tower shall be granted, constructed, developed, or maintained into, on, over, under, or across the Protected Property without the prior written approval of the Holder. Notwithstanding the foregoing, advanced notice to Holder shall not be required for short-term and temporary licenses or leases across existing rights-of-way or land, so long as such licenses or leases do not include any land-clearing activities. For purposes of this Section VII.A.3(b), short-term and temporary means less than three years. Sugar bush leases may be granted, provided that Grantor obtains the Holder's prior written approval.

   (c) Conservation Easements. No additional conservation easements or deed restrictions shall be placed on the Protected Property without the prior written approval of the Holder.

4. **Ecosystem Service Markets.** Grantor may participate in ecosystem service market programs, including but not limited to carbon credit programs and stream, wetland, and species mitigation credit programs, that are consistent with this Conservation Easement and that do not affect Holder's right of enforcement of the Conservation Easement.

5. **Baseline Documentation.** To describe the present condition of the Protected Property and its relevant natural features, resources, and conditions, Grantor and Holder have established an inventory of the same (the "Baseline Documentation") and have certified the same as an accurate representation of the condition of the Protected Property as known to them as of the date of this grant. The Baseline Documentation is incorporated into this Conservation Easement by reference.

   Holder will prepare addenda to the Baseline Documentation from time to time to document changes to the Protected Property. Such addenda will become a part of the Baseline Documentation upon the mutual approval of Grantor and Holder. Holder will forward copies of such addenda to Grantor for Grantor's records. Holder also shall provide to MDEP, upon request, copies of the then-current Baseline Documentation with all applicable addenda.

6. **Land Uses in Accordance with a Forest Management Plan, Best Management Practices, and Applicable Laws and Regulations.**

To establish and maintain in perpetuity wildlife travel corridors along riparian areas and between Mature Forest habitat, a 100-foot no-harvest buffer must be maintained around all perennial streams and associated open wetlands as depicted in the Baseline Documentation beginning at the normal high-water line (up to no more than approximately 2,400 acres), and management must be maintained for continuous Mature Forest habitat from 100 feet to 330 feet from the normal high water line (up to no more than approximately 4,500 additional acres). Harvesting equipment crossings of these perennial streams is prohibited, except to construct road or skid trail crossings, as described in the Annual Report described in subsection VII.E.1(c)ii., to facilitate Commercial Forest Management Activities, in which case those crossings will be minimized and constructed to protect streambank integrity (all of the preceding in this paragraph being "Riparian Habitat Management Standards").

At a minimum, Commercial Forest Management Activities must result in 50% of the Productive Forest Acres as identified in the Baseline Document and Forest Management Plan of the protected property with a mix of native species with a minimum basal area of 80 square feet per acre of live trees at least 4.5 inches in diameter at breast height, including a minimum basal area of 60 square feet per acre of live trees at least 50 feet tall, accompanied by the presence of representative levels of well-distributed standing dead and downed trees where present prior to management activity no later than December 31, 2065, and thereafter in perpetuity (the "Mature Forest Goal"). Progress toward the Mature Forest Goal will be made at the following rates: 13% in 2025, 20% in 2035, 30% in 2045, 40% in 2055, and 50% in 2065 (collectively, "Milestones"). Progress toward reaching the Milestones and Mature Forest Goal will be provided to Grantor in annual progress reports and, as necessary, addressed in updates to the Forest Management Plan. Holder has the right to seek verification of Grantor's measurements toward reaching the Milestones and Mature Forest Goal, provided that such verification is performed by the Maine Forest Service or another third party agreed to by Grantor. Notwithstanding the above, Grantor and the Holder agree that in the event that a hurricane, fire, flood, drought, disease, or forest health pest outbreak causes or substantially contributes to the failure of Grantor to meet the Milestones or Mature Forest Goal ("Force Majeure Event"), then Grantor shall not be found in non-compliance with this Conservation Easement. Following such an event, the Grantor and Holder shall work cooperatively to revise the Forest Management Plan in furtherance of the Conservation Values of this Conservation Easement, which may include deferring further harvests until the Mature Forest Goals are met. Any further harvesting shall require prior written approval of the Holder and give priority to restoring progress towards the Milestones and the Mature Forest Goal.

A Forest Management Plan (the "Forest Management Plan") must be developed for the Protected Property as required by the Order. All permitted land use activities on the Protected Property must be conducted in accordance with applicable local, state, and federal laws and regulations and Best Management Practices, in a manner consistent with

the Purposes and other terms of this Conservation Easement, and in conformity with the Forest Management Plan.

(a) Forest Management Plan. As of the date of this Conservation Easement, Grantor has submitted a 10-year Forest Management Plan, for Holder approval, that meets the requirements set forth in this Section VII.A.6. The Forest Management Plan has been prepared for Grantor by one or more professional foresters licensed in the State of Maine and has been approved by the Holder and MDEP as consistent with the terms of this Conservation Easement. All permitted land use activities on the Protected Property, including Commercial Forest Management Activities, must be conducted in accordance with the approved Forest Management Plan, except for preliminary resource evaluation. Updates to the Forest Management Plan must be completed every ten years and prepared by a professional forester licensed in the State of Maine and must comply with the requirements of this Conservation Easement. The Grantor must provide to Holder a copy of the Forest Management Plan. As specified in Section VII.A.6(f), Grantor must also provide to Holder for Holder's review, but not for Holder's approval, a copy of the ten-year updates to the Forest Management Plan.

(b) Provisions of the Forest Management Plan - General. The Forest Management Plan must include, at a minimum, the following information:

i. identification of the natural and physical features of the Protected Property at the time of adoption and at the time of periodic updates of the Forest Management Plan, including forest types, species composition, current stocking levels, age, quality, health, and relevant stand history to the extent known; current and planned harvest areas; existing access routes; wetlands and water bodies; and locations of special plant or wildlife habitat, including significant wildlife habitats, habitat for rare, threatened, or endangered plant and wildlife species, and rare or exemplary natural communities identified in publicly available information; and other special management areas;

ii. a description of Grantor's actions to protect and manage soil productivity and water quality, including, where Commercial Forest Management Activities are undertaken, practices to be employed upon completion of harvesting operations to ensure soil stabilization as may be required to comply with Best Management Practices, or other comparable or more protective standards for soil and water protection acceptable to Grantor and approved in advance by Holder;

iii. a description of how Commercial Forest Management Activities and other permitted activities will be conducted to: (1) minimize impacts to important plant and wildlife habitats present; (2) manage known site-specific occurrences of animal and plant species that are listed by state or federal agencies as endangered, threatened, or of "special concern" for such time period as such species are so listed; and (3) meet the requirements of state and federal law regarding threatened and endangered species and include best management practices for these species as proposed during consultation with MDIFW. So long as appropriate

consultations are conducted and documented, the requirements of this section will be considered complete for Forest Management Plan approval.

iv. a description of the foreseeable situations in which chemical applications will be recommended, including the type, method of application, and recommended measures to protect water quality, fish and wildlife, and public safety.

v. management guidelines and restrictions for the following areas: (1) Deer Wintering Areas as mapped by the MDIFW or successor agency; and (2) vernal pools, Bat Hibernacula, Inland Wading Bird and Waterfowl Habitats, Heritage Fish Waters, and rare / exemplary natural communities, as identified by MNAP. Management guidelines and restrictions on activities within these areas should be consistent with this Conservation Easement, Best Management Practices, and MDIFW and MNAP recommendations, and with goals of improving forest health, promoting Mature Forest, and protecting plant and wildlife habitat and water quality. So long as appropriate consultations are conducted and documented, the requirements of this section will be considered complete for Forest Management Plan approval.

vi. a description of the Milestones and how the Protected Property will be managed to meet the Mature Forest Goal to provide for blocks of areas of habitat for species preferring Mature Forest habitat and wildlife travel corridors along riparian areas and between Mature Forest habitat; and

vii. a description and mapping of known recreational spots and trails used by the public; and

viii. a copy of this Conservation Easement as an Appendix to the Forest Management Plan.

(c) Additional Provisions of the Forest Management Plan Specific to Commercial Forest Management Activities. The Forest Management Plan must contain the following additional information:

i. a description of forest management goals and how forestry methods and actions proposed will meet the Mature Forest Goal and other requirements of Section VII.A.6, protect forest health, and are consistent with the Conservation Purposes and other terms of this Conservation Easement, taking into account the natural structure, function, and dynamics of the forest to the extent practicable given baseline forest conditions as of the date of this Conservation Easement;

ii. a recent or reasonably updated forest inventory at a density appropriate to the scale and history of the forest on the Protected Property, including current stand-typing information (forest type-size-density classes), species, size classes, and products for the Protected Property as of the date of the Forest Management Plan or Forest Management Plan update;

iii. a representation of progress made toward reaching Milestones and the Mature Forest Goal.

(d) Term of the Forest Management Plan. Grantor must submit to the Holder at least every ten years an update to the Forest Management Plan prepared for Grantor as provided in Section VII.A.6(a) above, for the Holder's review as provided in Section VII.A.6(f) below. Nothing herein shall prohibit Grantor from submitting a new or updated Forest Management Plan more frequently than every ten years provided, however, that any revised Forest Management Plan submitted during the first ten years must be approved by the Holder. The Forest Management Plan must encompass the entire portion of the Protected Property owned by Grantor and is subject to the Holder's review pursuant to Section VII.A.6.f below.

(e) Property Transfer; Forest Management Plan adopted by a subsequent owner. In the event of a transfer of title of the Protected Property, a subsequent owner must adopt a Forest Management Plan. This may be done either: (1) with notice to the Holder, by adopting the prior owner's existing Forest Management Plan for the Protected Property and if so adopted, operating consistently with that plan, or (2) by submitting a new Forest Management Plan. Upon review of such new Forest Management Plan by the Holder pursuant to Section VII.A.6(f) below, such Forest Management Plan is considered adopted by the new owner, and that owner must operate within the constraints of such Forest Management Plan and in accordance with the terms of the Easement.

(f) Holder Review. Grantor must provide to the Holder any proposed Forest Management Plan or amendments to the Forest Management Plan. Within 45 days of receipt of the amended Plan, the Holder will provide written comments to Grantor identifying and explaining any portion of the Forest Management Plan that the Holder finds to be inconsistent with the terms of this Conservation Easement and that could result in a violation of this Conservation Easement. The Holder's review will only be based on whether the Plan contains all the required plan elements and is consistent with the terms of this Conservation Easement. If the Holder does not provide comments within 45 days, the proposed or amended Forest Management Plan shall be deemed adopted. Upon adoption, the Grantor shall ensure that all forest management activities are conducted in accordance with both the adopted Forest Management Plan and the terms of this Conservation Easement. The Parties acknowledge that the purpose of the Forest Management Plan is to guide management activities so that they are in compliance with this Conservation Easement, and that, barring a Force Majeure Event, the actual outcomes resulting from management activities on the Protected Property will determine compliance with this Conservation Easement. The Holder's right to provide comments or failure to exercise that right does not constitute a waiver of the terms of this Conservation Easement.

7. Maintenance of Boundaries. It is Grantor's responsibility to, at Grantor's cost and expense, locate and keep the boundaries of the Protected Property clearly marked on the ground. Notwithstanding the foregoing, Holder has the right, but not the obligation, to

maintain the boundaries of the Protected Property so that they are readily visible and identifiable. In the event of a suspected or material infringement or encroachment on the Protected Property, Grantor is solely responsible for establishing and re-establishing the boundary through flagging or blazing, or as necessary by surveying the boundary of the Protected Property affected by the suspected or material infringement and for an appropriate distance on either side of the affected area to prevent or abate unauthorized actions of a third party in violation of this Conservation Easement.

B. SUBDIVISION

1. **Limitation on Division.** The Protected Property shall remain in its current configuration without subdivision, partition, or other division into parcels or lots that results in the transfer or conveyance by deed, lease, or contract of any portion of the Protected Property into separate ownership or control from the remainder of the Protected Property. Notwithstanding the preceding, Grantor may subdivide, convey, and re-convey the Protected Property or any portion thereof solely for the purpose of allocating distinct parcels ("Tax Parcels") as part of an intra-company transfer, if all of the following conditions are met: (1) a Tax Parcel can only be conveyed to a parent, subsidiary, affiliate, or successor of the Grantor; (2) no Tax Parcel can be subsequently conveyed to any party that is not a parent, subsidiary, affiliate, or successor of the Grantor, unless all of the Protected Property is conveyed simultaneously to that same transferee; (3) all parcels comprising the Protected Property must be managed as a single unit with a single Forest Management Plan and Annual Report, and all terms of this Conservation Easement shall apply to all parcels as if they constituted a single, unified parcel of land; (4) all notices, consents, and approvals for all parcels comprising the Protected Property shall be sent to a single contact as provided herein under Section VIII.B; (5) such Tax Parcels may be held by no more than six (6) distinct legal entities at any one time; and (6) Grantor provides Holder 30 days written notice prior to the creation or conveyance of any Tax Parcel.

2. **Boundary Line Agreements.** Grantor may enter into boundary line agreements relating to the Protected Property to resolve bona fide boundary line disputes with the prior written approval of the Holder, which shall not be unreasonably withheld, provided that the total acreage of land protected under this Conservation Easement must not be reduced by a material amount as a result of any such agreement without court order. For purposes of this section, "bona fide boundary line dispute" means a dispute, disagreement, or discrepancy regarding the location of a boundary line between the Protected Property and an abutting parcel arising from inconsistencies in deed descriptions, surveys, historic use, or irregularities in boundary markers. Any land acquired by Grantor by virtue of such boundary line agreements will become subject to this Conservation Easement, unless Holder agrees otherwise, and any land conveyed to a third party by virtue of such boundary line agreements will, upon such conveyance, be deemed released from this Conservation Easement. Land acquired or conveyed to a third party by virtue of a boundary line agreement shall be memorialized by amendment to this Conservation Easement, which amendment shall update the Exhibit A Legal Description and attach a

new Exhibit B Survey Plan, which shall be a survey showing the area affected by the boundary line agreement.

3. **Certain Exception - Conveyances to State Agencies.** The fee interest in any portion of the Protected Property may be conveyed to the State of Maine for permanent conservation ownership, subject to the terms of this Conservation Easement. Such conveyance does not constitute a division, partition, subdivision or other legal or de facto creation of lots or parcels in separate ownership under this Section VII.B.

4. **Development Rights Extinguished.** Except as provided for by the terms of this Conservation Easement, all rights to develop or use the Protected Property that are expressly prohibited by this Conservation Easement are hereby extinguished, and as a result of such extinguishment, shall not be available for transfer to any other lands pursuant to a transferable development rights scheme or cluster development arrangement or otherwise. Neither the Protected Property nor any portion thereof may be included as part of the gross area of any other property not subject to this Conservation Easement for the purposes of determining density, lot coverage, or open space requirements under an otherwise applicable statute, regulation, or ordinance controlling land use and building density.

C. STRUCTURES

Existing buildings and structures on the Protected Property, as documented in the Baseline Documentation, may be maintained, repaired, or reconfigured, provided they remain within the same footprint, are not expanded, and are in accordance with applicable land use and building laws and regulations.

Except as provided below, no additional structures or towers of any kind, temporary or permanent, may be located on the Protected Property. Structures that are permitted include:

1. **Minor Non-Forestry/Recreational Structures.** Grantor reserves the right, but not the obligation, to install, maintain, replace, and relocate on the Protected Property minor, small scale structures to enhance the opportunity for, and management of, Non-Intensive Outdoor Recreation by the public, including, but not limited to: trail markers; small unlighted informational and interpretive signs; trail improvements such as steps, bog bridges, water bars, bridges to be used for recreational purposes, boardwalks, platforms, and railings; wells and springs for fresh water supply; small boat platforms, outhauls, and docks; primitive campsite facilities, fire rings, pit toilets, picnic tables, temporary tents for camping, and tent platforms; wildlife observation stations; study markers and grids; barriers or low fences to protect fragile areas and areas under active management or study; and gates or barriers to control unauthorized use or prevent or limit access by motor vehicles, provided that if Grantor erects any such permanent barriers or gates across roads and access points Grantor must notify Holder and post signs notifying members of the public that pedestrian access is permitted at the location of each barrier or gate, or allow the Holder to post such notice. Grantor must provide Holder with a key or code to be able to access the Protected Property as provided for in Section X.A.

2. **Forestry Structures and Improvements.** Grantor reserves the right to install, maintain, replace, and relocate on the Protected Property the following improvements and structures ("Forestry Structures and Improvements") necessary or appropriate to accomplish allowed Commercial Forest Management Activities, consistent with the Forest Management Plan:

   (a) minor improvements and structures including but not limited to gates, barriers, and boundary markers;

   (b) temporary structures and improvements, including, but not limited to, temporary equipment sheds, temporary sawmills, temporary office trailers and shelters for workers, portable privies, and additional similar types of temporary structures (for purposes of this section, "temporary" means that such structures are situated in a particular location for five years or less and are not thereafter situated or erected at that same location during a period of time which is one year from the date of removal of the same), but in no case shall a temporary structure include a permanent foundation; and

   (c) Land Management Roads, Winter Haul Roads, skid trails and roads or other logging trails, and associated bridges, drainage, and support structures in accordance with the Forest Management Plan and Section VII.A.6.

3. **Remedy for Adverse Conditions.** When Forestry Structures and Improvements cease to be used, as evidenced by the cessation of their use for a period of two (2) consecutive years and lack of maintenance, and such cessation of use and lack of maintenance results in an unsafe condition, a danger to human health, or a threat to the environment (an "adverse condition"), then Grantor must either remedy such adverse conditions, or remove such improvements, which may include burning or burying any decaying structures. If so removed, the site of such structures, improvements and utilities must be revegetated with native species and stabilized, all at Grantor's cost and expense. This does not apply to roads generally but does apply to road-stream crossing infrastructure.

4. **Notice.** Before commencing site preparation, construction, or relocation of any Land Management Roads or bridges (but specifically excluding routine maintenance, repair and replacement of existing roads and bridges for which no notice and/or approval are required) Grantor must notify Holder if such planned activities have not been previously described in the Forest Management Plan or Annual Report described in Section VII.A.6. Such notice and descriptions must, at a minimum, provide sufficient information to enable the State to determine whether the proposed activities are consistent with the terms of this Conservation Easement.

D. SURFACE ALTERATIONS

As of the date of this grant, there are no surface alterations on the Protected Property except for unpaved snowmobile trails, ATV trails, foot trails, skid trails, unpaved woods roads and timber

landing areas, and culverts and similar erosion control systems, gravel pits, and alterations associated with existing structures, all of which are described in the Baseline Documentation.

No additional filling, dumping, excavation, quarrying, mining, or other alteration may be made to the surface or subsurface of the Protected Property or to its surface or ground waters, or wetlands, except that Grantor reserves the following rights:

1. **Maintenance of Existing Surface Alterations.** Grantor reserves the right to maintain existing surface alterations described above in this Section VII.D, and the right to alter the surface to the extent reasonably necessary to exercise the rights conveyed or reserved in Sections VII.C ("Structures"), VII.E ("Forest and Vegetative Management"), and Section VII.F ("Access").

2. **Establishment of Trails, Roads, Parking Areas, and Certain Facilities.** Grantor reserves the right to construct, install, maintain, and relocate Land Management Roads, including culverts, bridges, other similar drainage and support structures and erosion control devices, Winter Haul Roads, gates, skid trails and skid roads, timber landing areas, and equipment and vehicle parking areas, associated with Grantor's Reserved Rights, including to support Commercial Forest Management Activities and Non-Intensive Outdoor Recreation on the Protected Property; provided that any such roads, parking areas, and water crossings shall abide by applicable local, state, and federal laws and regulations. The establishment of any new Land Management Roads or the relocation of existing Land Management Roads requires prior written approval from Holder. Grantor reserves the further right, but not the obligation, to establish and maintain, or allow others to establish and maintain, additional unpaved footpaths and recreational trails for Non-Intensive Outdoor Recreation, with notice to Holder, and provided that they are located and designed in a manner to prevent soil erosion and prevent damage to fragile plant communities and wildlife habitat.

   Public parking areas may be permitted subject to the prior written approval of the Holder, provided they are reasonably small and scaled to meet the intended use, unpaved, and consistent with the terms of this Conservation Easement.

   All such activity by Grantor must be conducted in a manner that is consistent with the Forest Management Plan and in compliance with any applicable statutory and regulatory requirements, Best Management Practices, and the terms of this Conservation Easement.

3. **Permitted Excavation and Use of Gravel, Sand, and Rock.**

   (a) Uses: Except where otherwise specifically prohibited or restricted by this Conservation Easement, Grantor reserves the right to excavate, remove, and use gravel, sand, and rock found on the Protected Property in connection with the following permitted activities (the "Permitted Excavation Activities"):

      (i) the exercise of Grantor's Reserved Rights on the Protected Property;

(ii) the construction of and maintenance of:

(aa) Land Management Roads, timber landings, and trails on the Protected Property;

(bb) Roads or trails providing public pedestrian and vehicular access, on, over, and across the Protected Property; and

(cc) Public parking areas as described above in VII.D.2.

(iii) the commercial sale of gravel, sand, and rock to any third party.

(iv) as may be provided to the Holder by Grantor, at Grantor's option, to support the Holder's rights herein.

(b) Standards: Grantor's Permitted Excavation Activities, including any reclamation undertaken following such activities, shall be conducted in accordance with the following standards:

(i) the exposed mineral surface of any new gravel, sand, or rock pit shall be limited to not more than ten (10) acres of exposed mineral surface per site at any time with not more than an aggregate of seventy (70) acres exposed at any one time, and a total aggregate area of mined acreage in perpetuity of one hundred fifty (150) acres for all Permitted Excavation Activities. For any existing pit larger than 10 acres that is identified in the Baseline Documentation, Grantor may continue extractions without changing the footprint of the pit. Changes to the footprint of any such pit must bring the resulting pit within the 10-acre limitation, but not expand further until such portions have been restored to bring the pit within 10 acres in size.

(ii) All Excavation Activities are prohibited within 330 feet of mapped perennial streams as depicted in Exhibit D. For existing pits in riparian buffers, there shall be no expansion of such pits.

(iii) Grantor shall take measures to prevent erosion and sedimentation from the Permitted Excavation Activities into all waterbodies, which measures may include ditches, sedimentation basins, dikes, dams, or such other control devices that are effective in preventing sediments from being eroded or deposited into such water body.

(iv) All excavation activities are prohibited below an elevation that is two (2) feet above the seasonal high groundwater level.

(v) No fuel, petroleum products, salt, or chemicals may be routinely stored in any gravel pit.

(vi) No equipment may be routinely fueled in any gravel pit.

(c) Reclamation of sites. All gravel, sand, and rock pits created or re-opened after the recording of this Conservation Easement shall be reclaimed and restored with native vegetation within two (2) years after Grantor determines that such pits are exhausted. Upon reclamation, such pits will no longer count toward the 70-acre aggregate cap of exposed acres at any one time identified in SectionVII.D.3(b)(i).

4. **Excavation for Research Purposes.** Grantor reserves the right, subject to prior notice to the Holder, to permit limited excavation of the surface of the Protected Property for ecological, educational, scientific research, or cultural or archeological investigation conducted under then generally accepted professional standards that will not adversely impact the Conservation Values of the Protected Property. Excavation permitted by this Section VII.D.4 must not exceed one (1) acre in the aggregate exposed at any one time, without the prior written approval of the Holder.

E. FOREST AND VEGETATIVE MANAGEMENT

As of the date of this grant, the Protected Property remains largely undeveloped and predominantly forested. Silvicultural practices on the Protected Property must prioritize the conservation of Mature Forest habitat within a dynamic landscape that includes forests at various stages of growth, age, and composition. These practices shall, as set forth in the Forest Management Plan, ensure achievement of the Mature Forest Goal, enhance habitat connectivity, and establish permanent wildlife travel corridors along riparian areas.

Grantor reserves the right to manage vegetation on the Protected Property for commercial and non-commercial purposes in a manner that ensures achievement of the Mature Forest Goal. All such management must be in accordance with the Forest Management Plan.

1. **Vegetation Management for Commercial Forestry Purposes.** Grantor reserves the right to manage the vegetation on the Protected Property in accordance with the Forest Management Plan and as set forth below in this Section VII.E.1.

   Vegetation management on the Protected Property should encourage a full range of site adapted native species and be consistent with the Conservation Purposes of the Conservation Easement. Existing Plantations are shown on Exhibit E and described in the Forest Management Plan and may be counted as Mature Forest. New Plantations may be created up to a total aggregate of 4,000 acres total in Plantations at any one time, but such new Plantations may not count as Mature Forest. Grantor shall consult with Holder in advance of establishing new Plantations utilizing any species that are not native to the State of Maine or the Acadian forest; provided that in no event shall Grantor utilize in Plantations any non-native species identified on the list of Regulated Invasive Terrestrial Plant Species developed by the Department of Agriculture, Conservation and Forestry, as currently set out at Chapter 273 and may be later amended.

(a) Waiver in Specific Circumstances. Grantor and the Holder agree that in the event of a hurricane, fire, flood, drought, or similar event or if an insect, disease, or forest health pest outbreak occurs and sanitation or salvage harvests are necessary to prevent the outbreak from spreading to adjacent stands then the restrictions in this Section VII.E.1 may be temporarily waived with the prior written approval of the Holder.

(b) Supervision of Timber Harvesting. Timber harvesting on the Protected Property must be supervised by a professional forester licensed in the State of Maine.

(c) Grantor's Reporting Obligations.

(i) From time to time or upon request, Grantor will make best efforts to provide to the Holder copies of Forest Operations Notifications and other notifications regarding harvest locations, harvest activities, and related information (and all amendments, modifications changes, and supplements thereto) applicable to the Protected Property (the "Harvest Notifications") simultaneously with Grantor's transmittal of the same to the State of Maine, Department of Agriculture, Conservation and Forest, Bureau of Forestry (a/k/a the Maine Forest Service) or successor agency.

(ii) Grantor must provide the Holder with a written annual report that accurately describes the forestry and other activities on the Protected Property during the preceding year, including harvest locations ("Annual Report"). Grantor must also describe in the Annual Report the estimated location, silvicultural objectives, and timing of all forestry operations and other activities planned for the coming year, including planned skid trail crossings. In the report, Grantor must also demonstrate the consistency of such completed and anticipated forestry activities with the Forest Management Plan.

(iii) Grantor must provide the Holder with reasonable opportunity to meet with Grantor and its supervising licensed professional forester at least annually to review the Annual Report.

2. **Vegetation Management to support Non-Intensive Outdoor Recreation and Affirmative Rights Conveyed to the State.** Grantor has the right, but not the obligation, to manage vegetation by cutting, pruning, and planting as necessary to accommodate Non-Intensive Outdoor Recreation in accordance with the Forest Management Plan and as set forth in Section VII.F. Such vegetation management may include the minimal removal of vegetation for safety purposes and for the creation of scenic vistas and views from trails, public roadways, campsites, overlooks, and other public vantage points; provided that all such vegetation management must be conducted in a manner that does not adversely impact the Conservation Values and scenic character of the Protected Property; and further provided that no new openings or clearings in the forest greater than one-half (1/2) acre are permitted for such purposes without the prior written approval of the Holder.

3. **Incidental Operations.** Small-scale commercial or industrial operations incidental to and compatible or in connection with activities and uses expressly permitted under this Conservation Easement, such as commercial guiding, hunting bear over bait, and similar commercial recreational ventures, are allowed on the Protected Property. Subject to Holder's prior written approval, the processing and sale of products produced on the Protected Property incidental to and compatible or in connection with activities and uses permitted under this Conservation Easement are allowed on the Protected Property.

F. ACCESS

1. **Non-Motorized Public Access On and Across the Protected Property.** Grantor must permit public access on and across the Protected Property for Non-Intensive Outdoor Recreation in accordance with this section.

   Grantor agrees to take no actions to prohibit or discourage non-motorized access by the public on or over the Protected Property for Non-Intensive Outdoor Recreation, subject to reasonable rules and regulations as provided in Section VII.F.3 and the Forest Management Plan.

2. **Fees.** Neither Holder nor Grantor may charge the public fees for access to or use of the Protected Property for Non-Intensive Outdoor Recreation. Under no circumstances may Grantor retain or allow exclusive use of the Protected Property to any person or entity for recreational purposes.

3. **Rules and Regulations.** Grantor may make reasonable rules and regulations for managing or prohibiting any of the following uses for Non-Intensive Outdoor Recreation: night use; camping; noise-generating activities; open fires; use of motor vehicles; paid guides, outfitters, or services; access by domesticated animals or pets; bear baiting or hunting with dogs; any use that may interfere with or be harmful to members of the public using the Protected Property, adversely impact the Conservation Values of the Protected Property, or the proper exercise of Grantor's reserved rights. Grantor also has the right to temporarily restrict public access on limited areas of the Protected Property, and to relocate designated trails, to protect fragile areas under study, or for safety purposes during Commercial Forestry Management Activities, or during other permitted management activities that may pose a hazard to recreational users or to ensure safety, to permit necessary maintenance, or to preserve scenic, ecological, or other Conservation Values of the Protected Property. Grantor shall make best efforts to provide prompt written notice to Holder for any restrictions to public access guaranteed under this easement where such restrictions either: a) are anticipated to last for more than one season; or b) will or may significantly affect Non-Intensive Outdoor Recreation (e.g., mainline road closures, trail access) or Holder's rights of monitoring and enforcement.

4. **Recreational Use Statute.** Nothing in this Conservation Easement shall be interpreted as an assumption of responsibility by, or basis for liability on the part of, Grantor or Holder for any injury to person or damage to property or loss of life that may be sustained by any person as a result of any entry on or use of the Protected Property, nor

shall anything in this Easement be construed to limit, reduce, or waive any of Grantor's or Holder's protections, rights, or immunities under 14 M.R.S. § 159-A. Grantor and Holder specifically claim and retain all the protections, rights, defenses, and immunities provided under Maine law to owners, lessees, managers, holders of an easement, or occupants of land, including the protections contained in 14 M.R.S. § 159-A.

5. **Rights Granted and Reserved.** Nothing in this Conservation Easement shall be construed to preclude Grantor's right to grant licenses for management, or additional access on, over, or across the Protected Property for Non-Intensive Outdoor Recreation by the public, and for motorized or mechanized use by the public, subject to the prior written approval of the Holder, provided such licenses are consistent with the Conservation Purposes of this Conservation Easement and do not adversely impact the Conservation Values of the Protected Property.

   Additionally, nothing in this Conservation Easement shall prevent or limit access by Grantor or Holder across the Protected Property by motor vehicles over existing or approved forest roads for monitoring, management, or emergency purposes.

VIII. NOTICES, CONSENTS, AND APPROVALS

A. **Notices, Consents, and Approvals Provided to Holder.** Any notices, consents, or approvals provided to the Holder required by this Conservation Easement must be in writing and must be personally delivered or sent by registered or certified mail, or other courier providing reliable proof of delivery, to the following person and address, or such other person or address as may be hereafter specified:

   Director, Bureau of Parks and Lands
   22 State House Station
   Augusta, Maine 04333-0022

   With a copy to

   Office of Attorney General
   Natural Resources Division
   6 State House Station
   Augusta, ME 04333

   All other communication must be made by reasonable means under the circumstances. Notices to Holder or Holder's consent must include, at a minimum, sufficient information to enable Holder to determine whether proposed plans are consistent with the terms of this Conservation Easement.

B. **Notices, Consents and Approvals Provided to Grantor.** Any notices, consents, or approvals provided to Grantor required by this Conservation Easement must be sent by registered or certified mail, or other courier providing reliable proof of delivery, to

Grantor's designee at the following address, or to such other person or address as may be hereafter specified:

_____
_____
_____

With a copy to
_____
_____
_____

All other communication must be made by reasonable means under the circumstances. Such notices to Grantor or requests for Grantor consent, required or contemplated hereunder, must include, at a minimum, sufficient information to enable Grantor to determine whether the matter disclosed in the notice or the matter as to which consent is requested is consistent with the terms of this Conservation Easement.

C. **Other Reasonable Methods of Communication.** Notwithstanding the foregoing, as an alternative to delivery by registered or certified mail or other courier as provided above, notices, consents, and approvals may be delivered by other reasonable methods, such as email communications, as mutually agreed upon in advance, in writing, by Holder and Grantor. Documents with original signatures shall be provided upon the request of either party.

D. **Designation of Agent for Grantor in Certain Cases.** In the event that the Protected Property is owned by a trust, business entity, or any common or jointly held ownership, such grantor entity, or the common or joint owners, must designate an agent to be responsible for the granting of approvals of Grantor and the receipt of notices on behalf of Grantor. If no single owner or agent is so designated, the approval of or notice to, any executive officer of the business entity, or any one common or joint owner, is deemed the approval of or notice to all.

IX. COSTS AND LIABILITIES

A. **Payment of Taxes and Discharge of Liens by Grantor.** Grantor must pay and discharge when due all property taxes and assessments imposed upon the Protected Property and any uses thereof, and, subject to Section XII.G, avoid the imposition of any liens resulting from the actions of Grantor, its contractors and agents, which may impact Holder's rights hereunder. Subject to Section XII.G, Grantor must keep the Protected Property free of any liens or encumbrances, including without limitation those arising out of any work performed for, materials furnished to, or obligations incurred by Grantor. Holder must not incur any liens or encumbrances against the Protected Property, including, without limitation, those arising out of any work performed for, materials furnished to, or obligations incurred by Holder.

B. No Possessory Rights. Except as provided in Section VII, Grantor acknowledges that Holder has no possessory rights in the Protected Property, nor any responsibility or right to control, maintain, or keep up the Protected Property. Grantor shall retain all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Protected Property.

C. Limitation on Obligations of Holder. Grantor is responsible for, and Holder shall have no responsibility whatsoever for, the operation of the Property, or the monitoring of hazardous and other conditions thereon, unless expressly undertaken by separate written agreement. Notwithstanding any other provision of this Conservation Easement to the contrary, this Conservation Easement shall not be construed such that: (1) it creates in Holder the obligations or liabilities of an "owner" or "operator" as those words are defined and used in the environmental laws, including without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 United States Code, Sections 9601 *et seq.*) or any successor or related law; (2) it creates in Holder's obligations or liabilities of a person described in 42 United States Code Section 9607(a)(3) or any successor or related law; or (3) Holder has any control over Grantor's ability to investigate and remediate any hazardous materials associated with the Protected Property. The term "environmental laws" includes, without limitation, any federal, state, local, or administrative agency statute, regulation, rule, ordinance, order, or requirement relating to environmental conditions or hazardous substances.

X. HOLDER'S AFFIRMATIVE RIGHTS

In addition to the public access rights granted to Holder's in Section VII.F ("Access") and in Section VII.A.8 ("Maintenance of Boundaries") herein, Holder has the following additional rights:

A. Holder's Right of Entry. In a reasonable manner, Holder has the right to enter the Protected Property, including over roads owned by Grantor or rights of way or other access ways available to Grantor for access to the Protected Property, for inspection, monitoring, and enforcement purposes (see Exhibits B and C).

B. Enforcement. Holder has the right to enforce this Conservation Easement by proceedings at law and in equity, including, without limitation, the right to require the restoration of the Protected Property to a condition in compliance herewith and receive damages for irremediable harm due to violation hereof. If Holder becomes aware of a violation or threatened violation of the terms of this Conservation Easement, then Holder must give written notice to Grantor and request that Grantor take corrective action sufficient to cure the violation or prevent the threatened violation, except where emergency circumstances or prevention of a threatened breach of this Conservation Easement require more immediate enforcement action. Wherever in this Conservation Easement Grantor is afforded or retains a right to provide a plan or otherwise express an intention to take an action (regardless of whether Holder has any right to approve same), nothing in this Conservation Easement may be construed to impair Holder's right to seek

injunctive or other relief as necessary to enforce the terms of this Conservation Easement against a violation or threatened violation hereof.

If a court determines that this Conservation Easement has been or is likely to be breached, Grantor will reimburse Holder for any reasonable costs of enforcement, including court costs, reasonable attorney's fees, and any other payments ordered by such court. Nothing contained in this Conservation Easement may be construed to preclude Grantor's or Holder's rights to recover damages from any third party for trespass or other violation of their respective rights in this Conservation Easement and the Protected Property.

C. Violations by Third Parties. Holder may not bring an enforcement action against Grantor for injury to or change in the Protected Property resulting from the actions of a third party trespasser or any person who has been permitted on the Protected Property by Holder pursuant to this Easement; resulting from natural causes or environmental catastrophe beyond Grantor's control, such as insect infestation, fire, flood, storm, and earth movement; or from any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Protected Property resulting from such causes. Grantor must take all reasonable actions, consistent with customary standards for the management of comparable areas used for the same purposes as the Protected Property, to prevent or halt third parties from violating this Conservation Easement; such reasonable actions shall include informing Holder of such violations and requesting that Holder take appropriate enforcement action. Grantor and Holder, together or unilaterally, may take such action as may be reasonably necessary to remedy acts of authorized or unauthorized third parties that constitute a violation of this Conservation Easement. Furthermore, in the event of violations of this Conservation Easement caused by acts of third parties, at Holder's option, Grantor agrees to join in any suit for the purposes of pursuing enforcement action. Grantor shall remain responsible for violations of this Conservation Easement caused by acts of Grantor's employees, contractors, agents, invitees, guests, licensees, and other expressly or impliedly authorized third parties. As to violations arising from the acts or omissions of unauthorized third parties, Holder, together or unilaterally, shall have a right to enforce this Conservation Easement directly against Grantor if Grantor fails to cooperate with Holder in all reasonable respects to halt or abate the violation resulting from such acts or omissions, or fails to promptly report a known or suspected violation to Holder.

D. Signs Identifying Holder. Holder has the right, after consultation with Grantor, to install and maintain small unlighted signs visible from public vantage points, to identify the Holder and inform the public and abutting property owners that the Protected Property is under the protection of this grant.

E. Third Party Enforcement Rights. Pursuant to the Order, MDEP shall have all of the enforcement rights granted to Holder pursuant to this Section X, and shall act as a third party enforcer of this Conservation Easement.

XI. CONSERVATION EASEMENT REQUIREMENTS UNDER STATE AND FEDERAL LAWS AND REGULATIONS

A. Conservation Purposes. This Conservation Easement is established exclusively for conservation purposes consistent with the provisions of the Internal Revenue Code, as amended at Title 26, U.S.C. Section 170(h)(1-6) and Sections 2031(c), 2055, and 2522, and under Treasury Regulations at Title 26 C.F.R. §1.170A-14 *et seq.*, as amended.

B. Alternative Qualified Holder. Holder is qualified to hold conservation easements pursuant to 33 M.R.S. § 476(2) and under Internal Revenue Code Section 170(h)(3).

C. Assignment Limitation. The burden of the Conservation Easement created hereby shall run with the Protected Property and is enforceable against all future owners in perpetuity. The benefits of this Conservation Easement are not appurtenant to any particular parcel of land but are in gross.

This Conservation Easement may be transferred or assigned only to a qualified holder pursuant to 33 M.R.S. § 476(2) and under Internal Revenue Code Section 170(h)(3) that is willing and able to hold this Conservation Easement for the Conservation Purposes and expressly agrees to assume the responsibility imposed on by the terms of this Conservation Easement. Any such assignee or transferee has the like power of assignment or transfer; provided, however, that any such further transfer or assignment is subject to the prior written approval of the State of Maine, acting by and through its Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands (or the successor State agency thereto). If the then-current Holder of this Conservation Easement ever ceases to exist or fails to carry out the responsibility imposed on the Holder by the terms of this Conservation Easement, then the State of Maine, acting by and through its Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands (or the successor State agency thereto), in consultation with Grantor, will identify and select an appropriate entity to which this Conservation Easement may be transferred. Any assignment or transfer of responsibility for the Conservation Easement must be in a recordable form and must be recorded in the Somerset County Registry of Deeds.

D. Termination and Proceeds. This Conservation Easement may only be extinguished or terminated by judicial order in a court of competent jurisdiction. It is the intention of the parties that any extinguishment or termination be approved by a court only if all of the Conservation Purposes of this Conservation Easement are impossible to accomplish, and if Grantor, Holder, and MDEP agree.

Grantor and Holder agree that the grant of this Conservation Easement gives rise to a property right which vests immediately in Holder and which has a fair market value equal to the amount by which the fair market value of the Protected Property immediately before the imposition of this Conservation Easement is reduced by the restrictions imposed by this Conservation Easement, as of the date of the execution of this Conservation Easement (the Original Percentage Reduction).

If either Holder or Grantor receive notice of the actual or threatened exercise of the power of eminent domain (hereinafter a "Taking") with respect to any interest in or any part of the Protected Property, the party who receives the notice shall promptly notify the other and the parties may proceed jointly or either party may at its discretion take such legal action as it deems necessary to: (i) challenge the Taking; (ii) challenge the amount of allocation of any award tendered by the Taking authority; or (iii) otherwise participate in, challenge, or appeal such proceedings, findings, or awards. Any third party counsel and consultants (including appraisers) hired by either party shall be reasonably acceptable to the other party. Each party shall be responsible for its own costs and legal fees, absent written agreement of the parties.

Should this Conservation Easement be terminated or extinguished as provided in this Section XI.D, in whole or in part, Holder shall be entitled to be paid no less than a portion of any proceeds of sale, exchange, or lease computed as to the greater of (i) the Original Percentage Reduction as required under U.S. Treasury Regulations at 1.170-A-14(g)(6)(ii); or (ii) the increase in value of the Grantor's property interest resulting from such extinguishment, as determined by the court, or in the absence of such court determination, by the agreement of the parties or, in the absence of such agreement, by an independent appraiser mutually selected by Grantors and Holder. Holder shall use its share of the proceeds or other moneys received under this paragraph in a manner consistent, as nearly as possible, with the stated, publicly beneficial Conservation Purposes of this Conservation Easement.

E. <u>Amendment</u>. This instrument sets forth the entire agreement of the parties with respect to this Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to the Easement. Holder and Grantor, with the approval of MDEP, may amend this Conservation Easement to enhance the Conservation Values of the Protected Property or add to the restricted property, provided that no amendment shall (i) affect this Conservation Easement's perpetual duration, (ii) conflict with or be contrary to or inconsistent with the Conservation Purposes of this Conservation Easement, (iii) reduce the protection of the Conservation Values of the Protected Property, (iv) affect the qualification of this Conservation Easement as an "interest in land" or (v) affect the status of Holder as a "qualified organization." No amendment shall be effective unless the amendment complies with 33 M.R.S. § 477-A and is documented in a notarized writing executed by Holder, Grantor, and MDEP and is recorded among the land records of the County or Counties in which the Protected Property is located.

XII. GENERAL PROVISIONS

A. <u>Applicable Law</u>. This Conservation Easement is created pursuant to Maine's Conservation Easement statute 33 M.R.S. §§ 476 – 479-C, inclusive, as amended, and must be construed in accordance with the laws of the State of Maine and in accordance with the Conservation Plan.

B. Interpretation. If uncertainty should arise in the interpretation of this Conservation Easement, judgment should be made in favor of accomplishing the Conservation Purposes. Nothing in this Conservation Easement should be construed to permit any activity otherwise prohibited by law, nor to prohibit the imposition of further land use restrictions by agreement of the parties (provided that such further land use restrictions shall be consistent with the Conservation Purposes) or by operation of law.

C. Non-Waiver. The failure or delay of Holder, for any reason whatsoever, to discover a violation or initiate an action to enforce this Conservation Easement does not constitute laches, a waiver, or estoppel of its rights to do so at a later time. No act or failure to act by or on behalf of Holder, including failure to provide notice of a violation in accordance with Section X ("Holder's Affirmative Rights"), may be construed to constitute an approval, waiver, or estoppel in connection with Holder's rights to enforce the terms of this Conservation Easement.

D. Compliance. A party's obligation as Grantor, or successor owner of the Protected Property, will cease, if and when such person or entity ceases to have any present, partial, contingent, collateral, or future interest in the Protected Property, but only to the extent that the Protected Property is then in compliance with this Conservation Easement.

Responsibility of Grantor for breaches of this Conservation Easement that occur prior to transfer of title will survive such transfer; provided that the new owner shall also be responsible for bringing the Protected Property into compliance unless Holder releases the new owner. In certifying Grantor's compliance with the Forest Management Plan, the State may request, at Grantor's cost, current stand-typing information (forest type-size-density classes) and information on timber harvest levels by species group that has occurred since the date of the then-current Forest Management Plan. At Grantor's cost, Holder will provide certificates to third parties, indicating the extent to which, to Holder's knowledge, there is compliance of the Protected Property with the terms of this Conservation Easement or compliance on the part of Grantor with any obligation hereunder. Such certificate shall be delivered within thirty (30) days of Grantor's request and shall speak to the condition of the Protected Property as of the Holder's most recent inspection. If Grantor requests the certificate to be as of a more recent inspection date, the Holder shall conduct an inspection within forty-five (45) days of receipt of Grantor's written request thereof, which shall be at Grantor's cost.

E. Severability. If any provision of this Conservation Easement or the application of any provision to a particular person or circumstance is found to be invalid, the remainder of this Conservation Easement and the application of such provision to any other person or in any other circumstance remain valid.

F. Standard for Holder Granting Discretionary Consent and Providing Prior Written Approval. Grantor and Holder acknowledge that, in view of the perpetual nature of this Conservation Easement, they are unable to foresee all potential future land uses, future technologies and future evolution of the land and other natural resources, and other future occurrences affecting the Conservation Purposes. Holder may determine whether (a)

proposed uses or proposed improvements not contemplated by or addressed in this Conservation Easement or (b) alterations in existing uses or structures, are consistent with the Conservation Purposes. To make such determinations and when otherwise determining whether to provide its prior written approval when required by this Easement, the following standard applies: Holder may grant discretionary consent or provide prior written approval only if Holder has determined in its reasonable discretion that the proposed use is consistent with the Conservation Purposes, substantially conforms to the intent of this grant, meets any applicable conditions expressly stated herein, is consistent with the Conservation Plan, and does not result in a material, adverse impact on the Conservation Values of the Protected Property. Holder has no right or power to consent to any use that would result in building development on the Protected Property other than that which is expressly allowed herein, or that would be inconsistent with the Conservation Purposes or limit the term or terminate this Conservation Easement, or that would impair the qualification of this Conservation Easement or the status of Holder under any applicable laws, including 33 M.R.S. §§ 476 *et seq.*, and Section 170(h) or 501(c)(3) of the Internal Revenue Code, or successor provisions thereof.

G. Liens Subordinated. Grantor represents that as of the date of this grant there are no liens or mortgages outstanding against the Protected Property, except as listed in Exhibit A, and that such liens are subordinated to Holder's rights under this Conservation Easement. Grantor has the right to use the Protected Property as collateral to secure the repayment of debt, provided that any lien or other rights granted for such purpose are subordinate to Holder's rights under this Conservation Easement. Grantor must provide documentation of such subordination to Holder. Under no circumstances may Holder's rights be extinguished or otherwise affected by the recording, foreclosure, or any other action taken concerning any lien or other interest in the Protected Property.

H. Protections, Rights, and Immunities. Nothing in this Conservation Easement shall be construed to limit, reduce, or waive any of Grantor's or Holder's protections, rights, or immunities under 14 M.R.S. § 159-A (Maine's recreational use statute), 14 M.R.S. §§ 8101-8118 (the Maine Tort Claims Act), or any other applicable provision of law or equity. Holder specifically claims and retains all such protections, rights, and immunities.

I. Standing to Enforce. Nothing herein should be construed to grant the public standing to bring an action hereunder, nor any rights in the Protected Property by adverse possession or otherwise, provided that nothing in this Easement shall affect any existing public rights in or to the Protected Property acquired by common law, adverse possession, prescription or other law, independently of this grant. Nothing in this Section XII.I shall limit the third-party enforcement rights provided to MDEP pursuant to Section X.E.

J. Holder's Ability to Exercise Rights. The parties acknowledge that the ability of Holder to exercise the rights or carry out the duties of Holder hereunder, including, without limitation, the installation, operation, and maintenance of any recreational improvements on the Protected Property, are subject to the availability of moneys appropriated or otherwise available to Holder and designated for such purposes. Nothing in this

Conservation Easement creates any obligation on behalf of Holder in excess of such availability of moneys appropriated or otherwise available to Holder.

K. Certain Rights Preserved. Without limiting Grantor's rights to prohibit third parties from engaging in activities that may result in claims adverse to Grantor's interest in the Property, and without acknowledging the validity of such claims of third parties that may exist now or in the future, this Conservation Easement shall not impair any existing prescriptive right in the Property that may have been acquired by the public or Holder prior to the date of this Conservation Easement, or any other right the public or Holder may have to use or access the Protected Property pursuant to law.

L. Subsequent Transfers.

(a) Sale Subject to Conservation Easement. Except as specifically provided herein, nothing in this Conservation Easement shall be construed to prevent Grantor from selling or otherwise conveying or transferring the Protected Property to a third party, subject to the terms of this Conservation Easement.

(b) Incorporation of Conservation Easement Terms. Grantor must incorporate the terms of this Conservation Easement by reference in any deed or other legal instrument by which Grantor divests itself of the Protected Property. Further, Grantor must notify Holder of the transfer of the Protected Property at least thirty (30) days prior to the date of such transfer. Grantor must provide a complete copy of this Conservation Easement to any transferee of any rights in the Protected Property before any such transfer and must provide Holder with a copy of any transfer documentation upon completion of such transfer. The failure of Grantor to perform any act required by this paragraph shall not impair the validity of this Conservation Easement or limit its enforceability in any way.

Notwithstanding anything to the contrary herein, the conveyance of the Protected Property includes all appurtenant rights associated with the Protected Property, including any and all rights of access thereto. In addition, upon conveyance of all or any portion of the Protected Property, consistent with the requirements in Section VII.B.1, Grantor may reserve rights of access across the lands so conveyed or other rights and easements for the benefit of Grantor's retained lands.

[signatures on the following pages]

XIII. HABENDUM AND SIGNATURES

TO HAVE AND TO HOLD the said Conservation Easement unto the said Holder and their successors and assigns forever.

IN WITNESS WHEREOF, _____ has caused this Conservation Easement to be executed by its duly authorized representative as of this ___ day of _____, 2025.

Signed, sealed and delivered
in the presence of: _____

_____ By: _____
Name:
Its:
Hereunto duly authorized

State of Maine
County of _____, ss. _____ ____, 2025

Personally appeared the above named _____, in his capacity as the _____ of _____ and acknowledged the foregoing instrument to be his free act and deed in his said capacity, on behalf of said _____.

Before me,

_____
Notary Public/Maine Attorney-at-Law
Name: _____

XIV. ACCEPTANCE BY STATE

Pursuant to 12 M.R.S. § 1850(1) & 33 M.R.S. § 477(2), Andrew R. Cutko, Director of the Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands, hereby accepts this Conservation Easement on behalf of the STATE OF MAINE.

Executed this _____ day of _____, 2025.

Signed Sealed & Delivered

STATE OF MAINE, Bureau of Parks and Lands
Department of Agriculture, Conservation and Forestry

By: _____
Andrew R. Cutko
Its Director, Duly Authorized

in the Presence of:

_____

STATE OF MAINE
COUNTY OF KENNEBEC. Date:

Personally appeared the above-named Andrew R. Cutko, Director of the Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands, and acknowledged acceptance of the above and foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of the STATE OF MAINE.

Before me,

_____
Name:
Notary Public/Attorney-at-Law

Pursuant to 33 M.R.S. § 477(2) and 38 M.R.S. § _____, Melanie Loyzim, Commissioner of the Department of Environmental Protection, hereby accepts the third-party enforcement rights contained in this Conservation Easement on behalf of the Department of Environmental Protection.

Executed this _____ day of _____, 2025.

Signed Sealed & Delivered **Department of Environmental Protection**

By: _____
Melanie Loyzim
Its Commissioner, Duly Authorized

in the Presence of:

_____

STATE OF MAINE
COUNTY OF KENNEBEC. Date:

Personally appeared the above-named Melanie Loyzim, Commissioner of the Department of Environmental Protection and acknowledged acceptance of the above and foregoing instrument to be her free act and deed in her said capacity, and the free act and deed of the Department of Environmental Protection.

Before me,

_____
Name:
Notary Public/Attorney-at-Law

XV. CONSENT OF COMMISSIONER

Pursuant to 12 M.R.S. § 1850(1), the Commissioner of the Department of Agriculture, Conservation and Forestry, hereby gives consent to acquisition by the STATE OF MAINE, Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands, of the above and foregoing Conservation Easement.

Executed this _____ day of _____, 2025.

Signed Sealed & Delivered

STATE OF MAINE
Department of Agriculture, Conservation and Forestry

By: _____
Amanda E. Beal
Its Commissioner, Duly Authorized

in the Presence of:

_____

STATE OF MAINE
COUNTY OF KENNEBEC. Date:

Personally appeared the above-named Amanda E. Beal, Commissioner of the Department of Agriculture, Conservation and Forestry, and acknowledged acceptance of the above and foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of the STATE OF MAINE.

Before me,

_____
Name:
Notary Public/Attorney-at-Law

XVII. ATTACHMENTS TO CONSERVATION EASEMENT

EXHIBIT A – Legal Description of the Protected Property

EXHIBIT B – Survey Plan of the Protected Property

EXHIBIT C – Map of Roads and Trails

EXHIBIT D – Map of Wetlands and Streams

EXHIBIT E – Existing Plantations located on the Protected Property

Exhibit A

Legal Description of the Protected Property

EXHIBIT A

NOTE: As used herein "recorded" shall mean recorded with the Somerset County Registry of Deeds.

BRADSTREET TOWNSHIP (T4 R7 BKP WKR)

The land situated in Bradstreet Township (T4 R7 BKP WKR), County of Somerset, and State of Maine, conveyed by that certain deed from S. D. Warren Company to SDW Timber II, L.L.C. dated November 5, 1998, and recorded in the Somerset County Registry of Deeds in Book 2489, Page 228.

EXCEPTING THEREFROM:

1. The land conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to State of Maine Department of Conservation Bureau of Parks and Lands dated September 22, 2009, and recorded in Book 4195, Page 167.

2. The land conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to The Nature Conservancy dated September 22, 2009, and recorded in Book 4195, Page 206, but EXCEPTING THEREFROM the land conveyed by deed of The Nature Conservancy to Plum Creek Maine Timberlands, L.L.C. dated June 26, 2015, and recorded in Book 4923, Page 266.

3. The "Protected Property" described in Conservation Easement from The Nature Conservancy to Forest Society of Maine dated July 22, 2011, and recorded in Book 4422, Page 245, as affected by Agreement Concerning Boundary Line between The Nature Conservancy and Plum Creek Maine Timberlands, L.L.C. dated January 30, 2012, and recorded in Book 4529, Page 265, as further affected by Amended and Restated Agreement Concerning Boundary Line between The Nature Conservancy, Plum Creek Maine Timberlands, L.L.C., and Forest Society of Maine dated January 21, 2014, and recorded in Book 4755, Page 159.

4. The land conveyed by deed of Weyerhaeuser Company to Central Maine Power Company dated November 14, 2016, and recorded in Book 5099, Page 211, together with all the land lying southerly of the land described in said deed.

5. To the extent not excepted by the above, all the land lying westerly and southerly of a line which is 33 feet westerly and southerly of the centerline of the southerly fork of the Mining Road, so-called.

PARLIN POND TOWNSHIP (T3 R7 BKP WKR)

The land situated in Parlin Pond Township (T3 R7 BKP WKR), County of Somerset, and State of Maine, conveyed by that certain deed from S. D. Warren Company to SDW Timber II, L.L.C.

dated November 5, 1998, and recorded in the Somerset County Registry of Deeds in Book 2490, Page 228.

EXCEPTING THEREFROM:

1. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to Summerhaven Properties, Inc. dated September 6, 2001, and recorded in Book 2853, Page 101.

2. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to Summerhaven Properties, Inc. and Moose Tracks, L.L.C. dated July 10, 2002, and recorded in Book 2997, Page 196.

3. The "Protected Property" described in Moosehead Region Conservation Easement granted by Plum Creek Maine Timberlands, L.L.C. to Forest Society of Maine and the State of Maine dated May 14, 2012, and recorded in Book 4523, Page 222.

4. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to the State of Maine dated March 10, 2016, and recorded in Book 5011, Page 1, and as corrected and rerecorded in Book 5012, Page 292. (Cold Stream)

5. The property conveyed by deed of Weyerhaeuser Company to Central Maine Power Company dated November 14, 2016, and recorded in Book 5099, Page 224.

6. The property conveyed by deed of Weyerhaeuser Company to Anthony C. George and Catherine M. George dated May 18, 2021, and recorded in Book 5715, Page 293.

7. The property conveyed by deed of Weyerhaeuser Company to the State of Maine dated April 15, 2021, and recorded in Book 5728, Page 182.

<u>JOHNSON MOUNTAIN TOWNSHIP (T2 R6 BKP WKR)</u>

The land situated in Johnson Mountain Township (T2 R6 BKP WKR), County of Somerset, and State of Maine, conveyed by that certain deed from S. D. Warren Company to SDW Timber II, L.L.C. dated November 5, 1998, and recorded in the Somerset County Registry of Deeds in Book 2490, Page 81, as affected by Corrective and Confirmatory Quitclaim Deed Without Covenant from S.D. Warren Company to Plum Creek Maine Timberlands, L.L.C. dated July 25, 2014, and recorded in the Somerset County Registry of Deeds in Book 4814, Page 137.

ALSO EXCEPTING THEREFROM:

1. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to Plum Creek Maine Marketing, Inc. dated July 1, 1999, and recorded in Book 2573, Page 191. (Marshall Yard Complex)

2. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to Plum Creek Land Company dated June 23, 1999, and recorded in Book 2570, Page 142, and as corrected by Correction Deed dated June 13, 2000, and recorded in Book 2694, Page 351.

3. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to Summerhaven Properties, Inc. dated September 6, 2001, and recorded in Book 2853, Page 101.

4. The "Protected Property" described in Moosehead Region Conservation Easement granted by Plum Creek Maine Timberlands, L.L.C. to Forest Society of Maine and the State of Maine dated May 14, 2012, and recorded in Book 4523, Page 222.

5. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to the State of Maine dated March 10, 2016, and recorded in Book 5011, Page 1, and as corrected and rerecorded in Book 5012, Page 292. (Cold Stream)

6. The property conveyed by deed of Weyerhaeuser Company to Central Maine Power Company dated November 14, 2016, and recorded in Book 5099, Page 230.

WEST FORKS PLANTATION

The land situated in West Forks, County of Somerset, and State of Maine, conveyed by that certain deed from S. D. Warren Company to SDW Timber II, L.L.C. dated November 5, 1998, and recorded in the Somerset County Registry of Deeds in Book 2491, Page 67.

EXCEPTING THEREFROM:

1. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to Plum Creek Land Company dated June 23, 1999, and recorded in Book 2570, Page 148, and as corrected by Correction Deed dated June 13, 2000, and recorded in Book 2694, Page 343, and as further corrected by Correction Deed dated October 31, 2000, and recorded in Book 2734, Page 308.

2. The land leased to Maine RSA#1, Inc. under a lease evidenced by Memorandum of Lease dated June 18, 2010, and recorded in Book 4292, Page 203, as affected by Corrective Memorandum of Lease dated January 9, 2015, and recorded in Book 4900, Page 142. (Cell Tower Site)

3. The "Protected Property" described in Moosehead Region Conservation Easement granted by Plum Creek Maine Timberlands, L.L.C. to Forest Society of Maine and the State of Maine dated May 14, 2012, and recorded in Book 4523, Page 222.

4. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to William Lyons dated March 11, 2015, and recorded in Book 4890, Page 62.

5. The property conveyed by deed of Plum Creek Maine Timberlands, L.L.C. to the State of Maine dated March 10, 2016, and recorded in Book 5011, Page 1, and as corrected and rerecorded in Book 5012, Page 292. (Cold Stream)

6. The property conveyed by deed of Weyerhaeuser Company to Central Maine Power Company dated November 14, 2016, and recorded in Book 5099, Page 255.

7. The property conveyed by deed of Weyerhaeuser Company to Central Maine Power Company dated November 14, 2019, and recorded in Book 5496, Page 134.

8. The property conveyed by deed of Weyerhaeuser Company to Richard E. Bellerose dated May 11, 2021, and recorded in Book 5714, Page 145.

Exhibit B

Survey Plan of the Protected Property

Exhibit C

Map of Roads and Trails

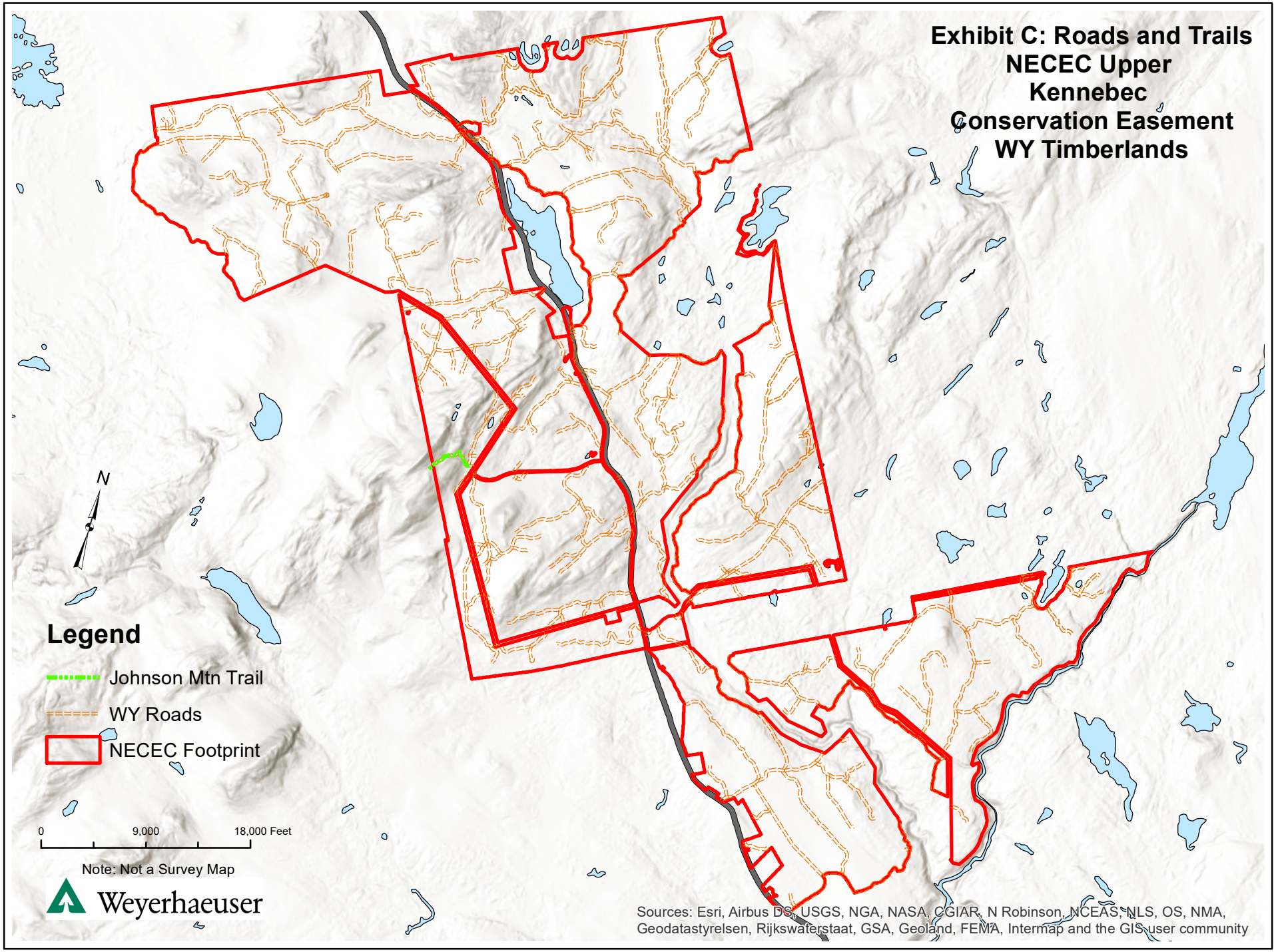


Exhibit C: Roads and Trails
NECEC Upper Kennebec Conservation Easement
WY Timberlands
N
Legend
Johnson Mtn Trail
WY Roads
NECEC Footprint
0
9,000
18,000 Feet
Note: Not a Survey Map
Weyerhaeuser
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Exhibit D

Map of Wetlands and Streams

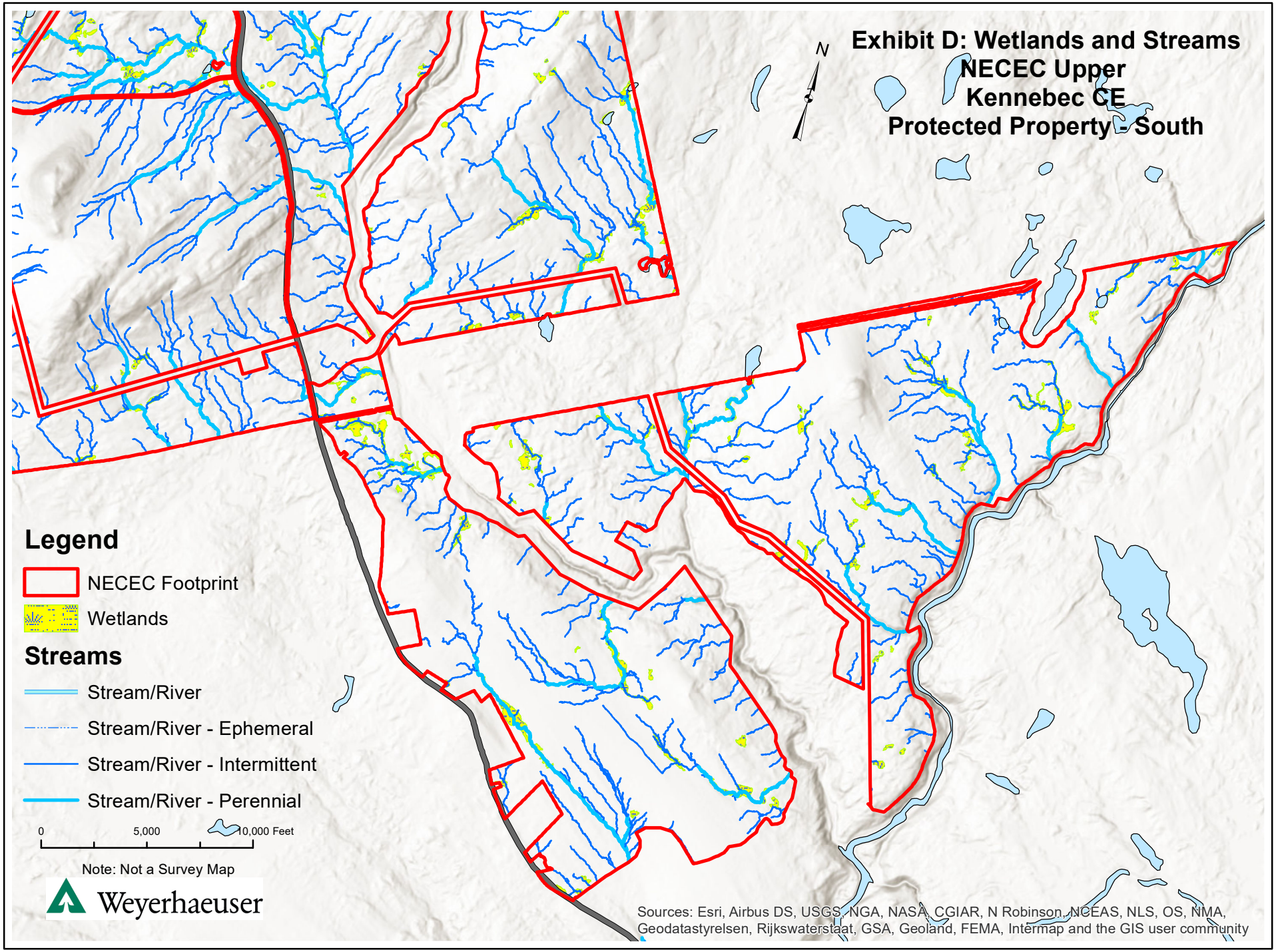


Exhibit D: Wetlands and Streams
NECEC Upper
Kennebec CE
Protected Property - South
N
Legend
NECEC Footprint
Wetlands
Streams
Stream/River
Stream/River - Ephemeral
Stream/River - Intermittent
Stream/River - Perennial
0
5,000
10,000 Feet
Note: Not a Survey Map
Weyerhaeuser
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Exhibit D: Wetlands and Streams
NECEC Upper Kennebec CE
Protected Property - North

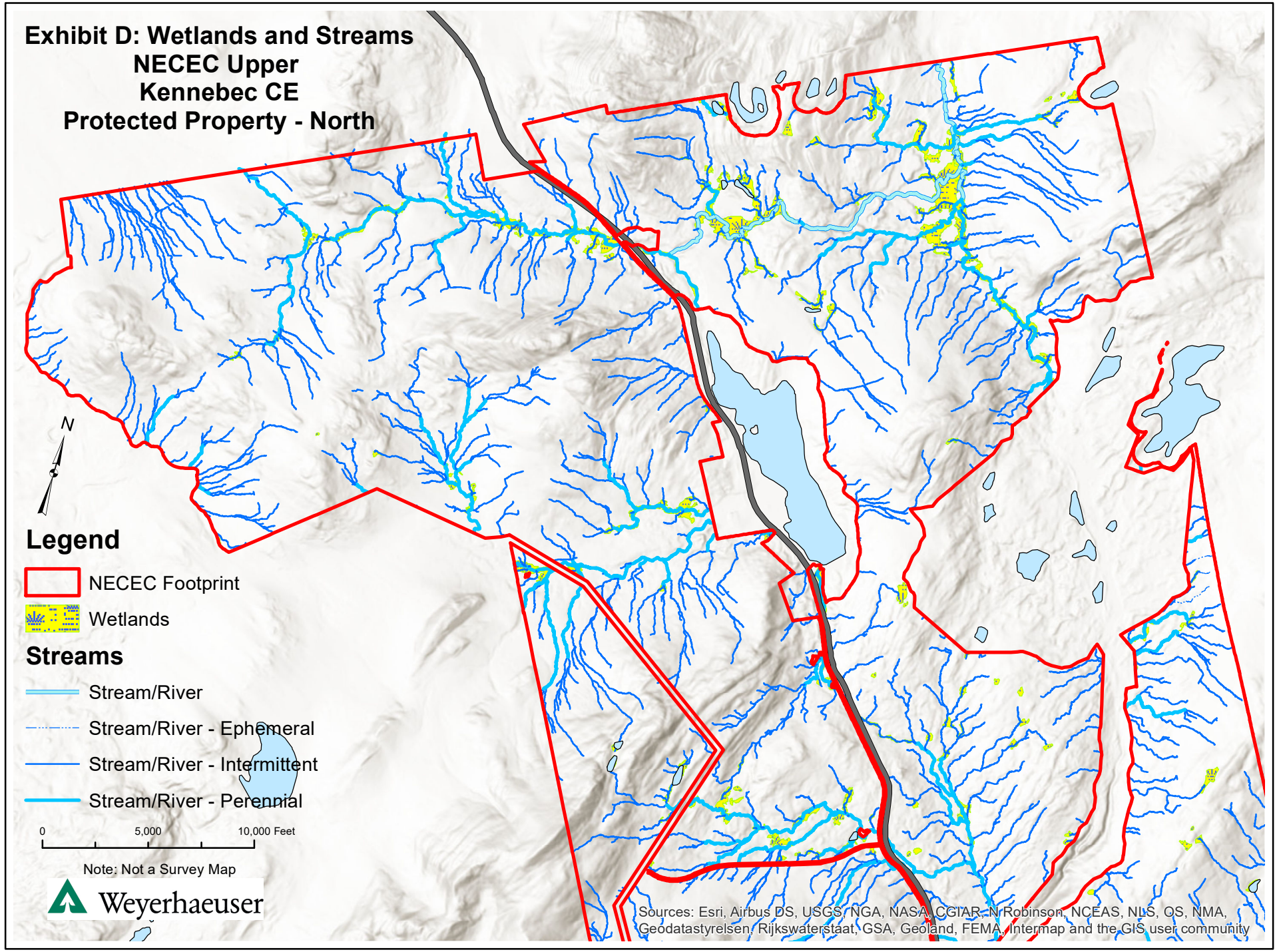


Exhibit E

Existing Plantations located on the Protected Property

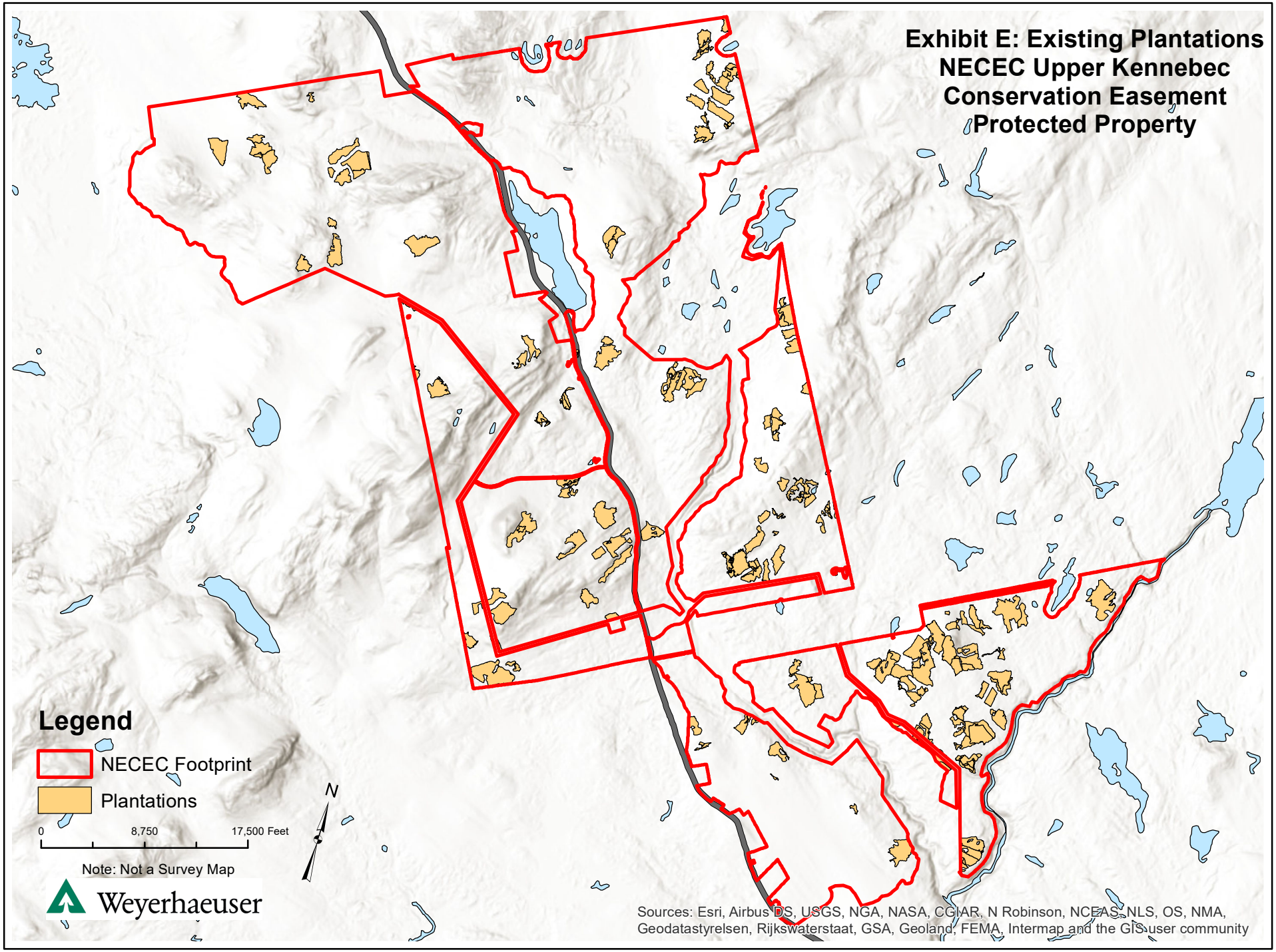


Exhibit E: Existing Plantations
NECEC Upper Kennebec
Conservation Easement
Protected Property
Legend
NECEC Footprint
Plantations
0
8,750
17,500 Feet
Note: Not a Survey Map
N
Weyerhaeuser
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Appendix B: Definitions

Baseline Documentation Report: The present condition of the Protected Property, including its conservation values, natural features and attributes, existing development, structures, buildings, and improvements, and existing uses of and activities on the Protected Property.

Conservation Plan: the Plan required by the Permit Orders that has a primary goal of compensation for the fragmenting effect on habitat of the NECEC, and the related edge effect, by promoting habitat connectivity and conservation of mature forest areas within the Protected Property.

Confirmed and Potential Endangered, Threatened and Special Concern Species: Species that are listed as Endangered, Threatened or are of Special Concern, each as defined below, that the MDIFW or MNAP have identified as either being present or have a strong potential of being present. In Maine, definitions and classifications for species of conservation concern are outlined by the Maine Department of Inland Fisheries and Wildlife (MDIFW).

1. Endangered Species - these are species in danger of extinction throughout all or a significant portion of their range within Maine. They receive the highest level of legal protection under the Maine Endangered Species Act (MESA).

2. Threatened Species - These are species likely to become endangered in the foreseeable future throughout all or a significant portion of their range in Maine. They also receive legal protection under MESA.

3. Species of Special Concern - This category includes species that do not currently meet the criteria for endangered or threatened status, but are considered, particularly vulnerable, at risk of becoming endangered, threatened, or extirpated (locally extinct), facing threats such as restricted distribution, low or declining numbers, or specialized habitat needs. These species are not legally protected under MESA but are monitored closely. Some are further designated as Special Concern – RARE, which may make them eligible for regulatory review, though they still lack the full legal protections of endangered or threatened species.

Exemplary Natural Communities: Communities defined by the Maine Natural Areas Program (MNAP) as “Any occurrence of a natural community type that is rare statewide (i.e., ranked S1, S2, or S3), or an exemplary occurrence of a more common community type (ranked S4 or S5)."

Forest Management Activities: Management of the forestland resources on the Protected Property, including, without limitation, the planting, growing, cultivation, stocking, and cutting of trees and other forest products; timber cruising; resource evaluation; herbicide, pesticide, and fertilizer application; timber stand improvement; pruning, mechanical and conventional timber harvesting and other forest harvesting; forest products transportation; natural and artificial

regeneration of Forest Stands; and other substantially similar and associated activities; and the construction, creation, use, and maintenance of woods roads, land management roads, skid trails, and haul roads, turnouts, timber landings, and crossing of flowing waters for such purposes; and any other forest management use or activity allowed by then-current law, rule, or regulation. Forest Management Activities also include management of the forest for wildlife habitat, outdoor recreation, scientific study, educational activities, and efforts to prevent, respond to, mitigate the effects of wildfires, invasive species, and potential or incurred tree damage by disease and insects.

Forest Stand: A contiguous group of trees sufficiently uniform in age class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

Mature Forest Habitat: A Forest stand consisting of a mix of native species with a minimum basal area of 80 square feet per acre of live trees at least 4.5 inches in diameter at breast height, including a minimum basal area of 60 square feet per acre of live trees at least 50 feet tall, accompanied by the presence of representative levels of well-distributed standing dead and downed trees as described and defined in the Conservation Easement in Section III and Section VII.A.6.

Normal High-Water Line: That line, which is apparent from visible markings, changes in the character of soils due to prolonged action of water or changes in vegetation, and which distinguishes between predominantly aquatic and predominantly terrestrial habitat. In the case of riparian wetlands that are immediately adjacent to streams and other water bodies, the normal high-water line is the upland edge of the wetland, not the edge of the open water within the stream corridor as described and defined in the Conservation Easement Definitions in Section III.

Perennial Streams: Those streams identified in the Baseline Documentation Report as having flowing water year-round except during extreme droughts, which are subject to Perennial Stream Buffers.

Perennial Stream Buffers: The No-Harvest Buffers and the Mature Forest Buffers on Perennial Streams (see details in Section VII.A.6 in the Conservation Easement).

Permit Orders: The May 11, 2020, Maine Department of Environmental Protection Findings of Fact and Order for the New England Clean Energy Connect project, as affirmed and modified by the July 21, 2022, Maine Board of Environmental Protection Findings of Fact and Order.

Productive Forest: Forest Stands that are currently capable of growing Mature Forest. Habitat Sites incapable of supporting 50-foot-tall trees and 60 square feet basal area per acre based upon site index are not considered productive forest.

Protected Property: Approximately 50,060 acres in the vicinity of Segment 1 subject to the Upper Kennebec Conservation Easement, which is located in Bradstreet Township, Johnson Mountain Township, Parlin Pond Township and West Forks Plantation as further identified in the Baseline Documentation Report.

Rare Plant Populations: Native Vascular plant species whose populations are highly vulnerable to loss within the state. These populations are defined and tracked by the Maine Natural Areas Program (MNAP).

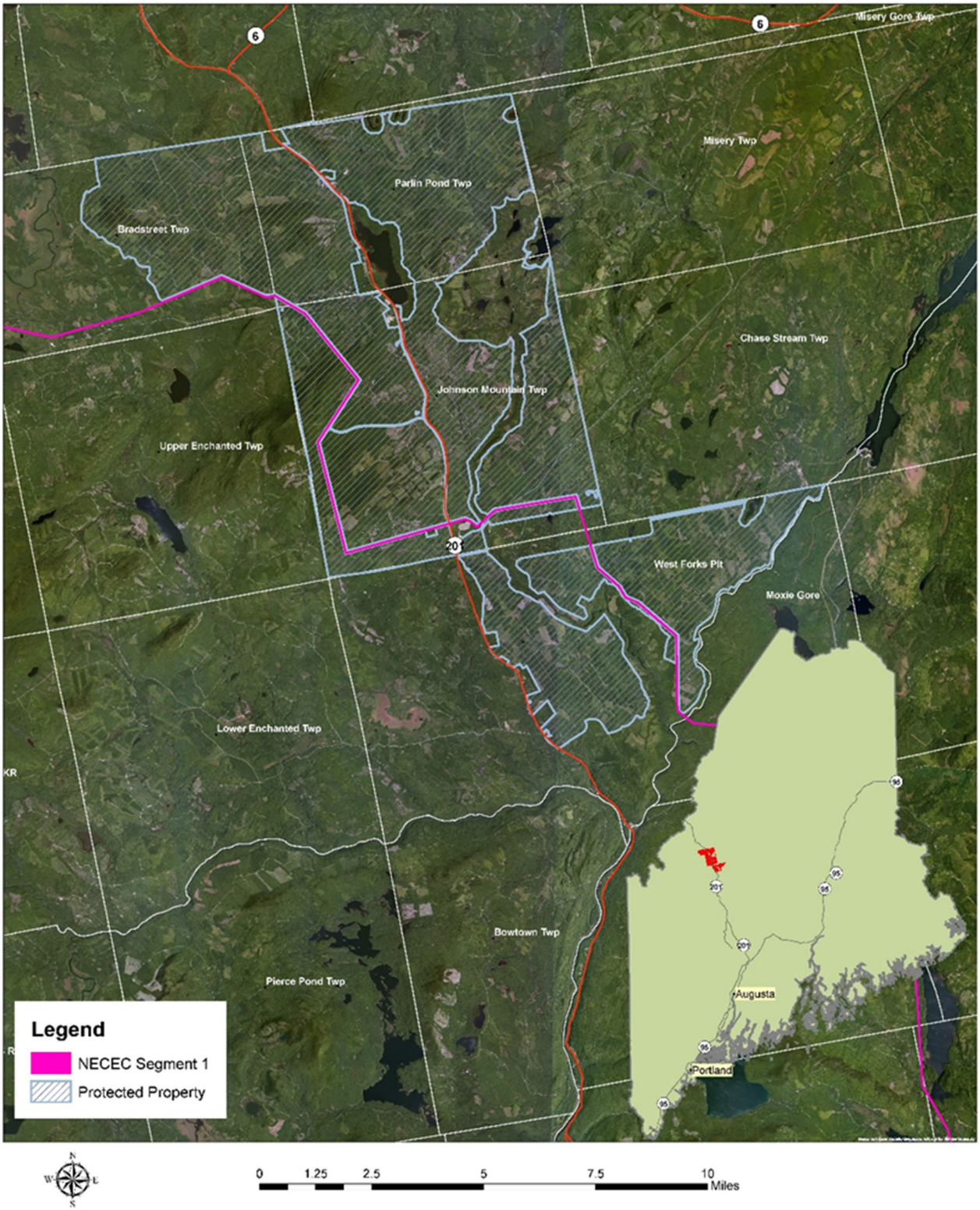
Riparian Wetlands: Wetlands located immediately adjacent to the banks of Perennial Streams.

Shifting Mosaic Forest Management: Over a larger landscape, harvesting that allows the types, sizes and age classes of tree species to constantly change over time and space. Shifting mosaic forest management principles include maintaining a variety of forest conditions and habitats, and considering how active management affects the landscape.

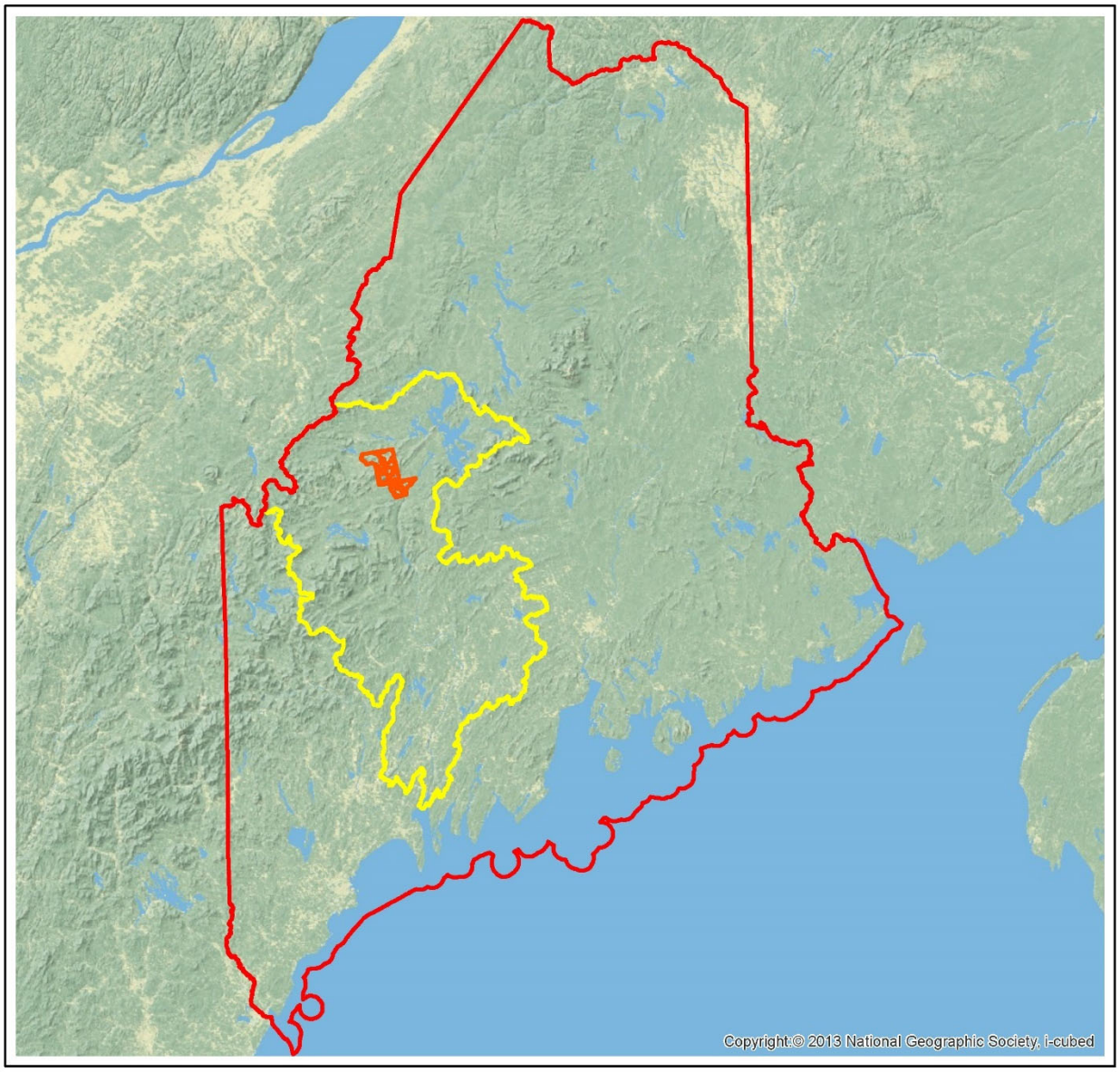
Timber harvesting: The cutting or removing of timber for the primary purpose of selling or processing forest products.

Well Distributed Coarse Woody Debris: Coarse Woody Debris refers to fallen dead trees, large branches, and logs that are left on the forest floor. These materials are considered "well distributed" when they are evenly spread across a forested area, rather than concentrated in piles or limited to certain zones.

Appendix C: Protected Property Map



Appendix D: Kennebec River Watershed Map



Legend

- State of Maine
- Kennebec River Watershed
- NECEC UKCE Footprint

N

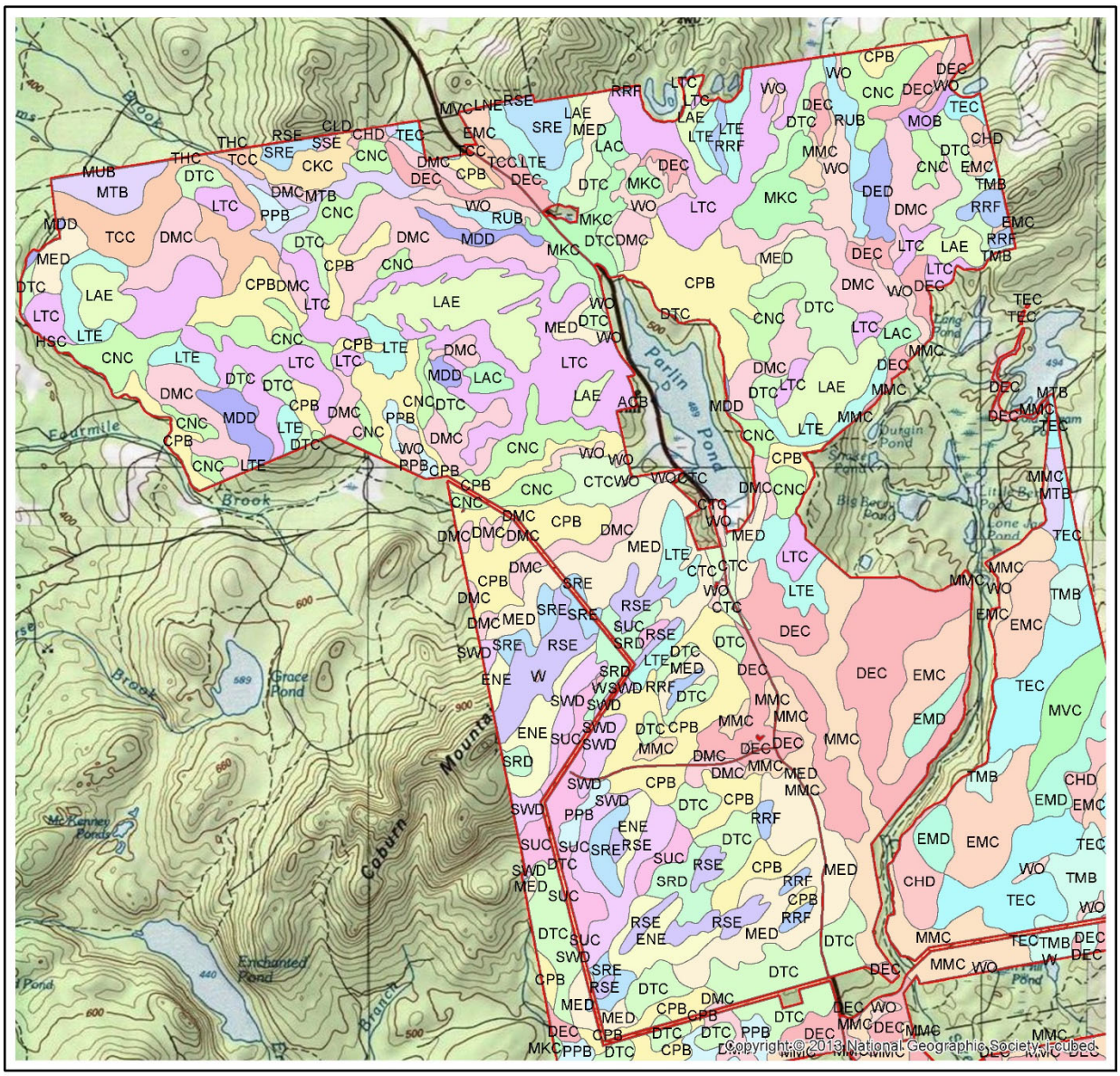
0 210,000 420,000 Feet

Note: Not a Survey Map

Weyerhaeuser

Appendix E: Soils Maps and Map Unit Details

NRCS Soils Map - North Half
NECEC Upper Kennebec CE - Protected Property



Legend

NECEC UKCE Footprint

USA Topo Maps

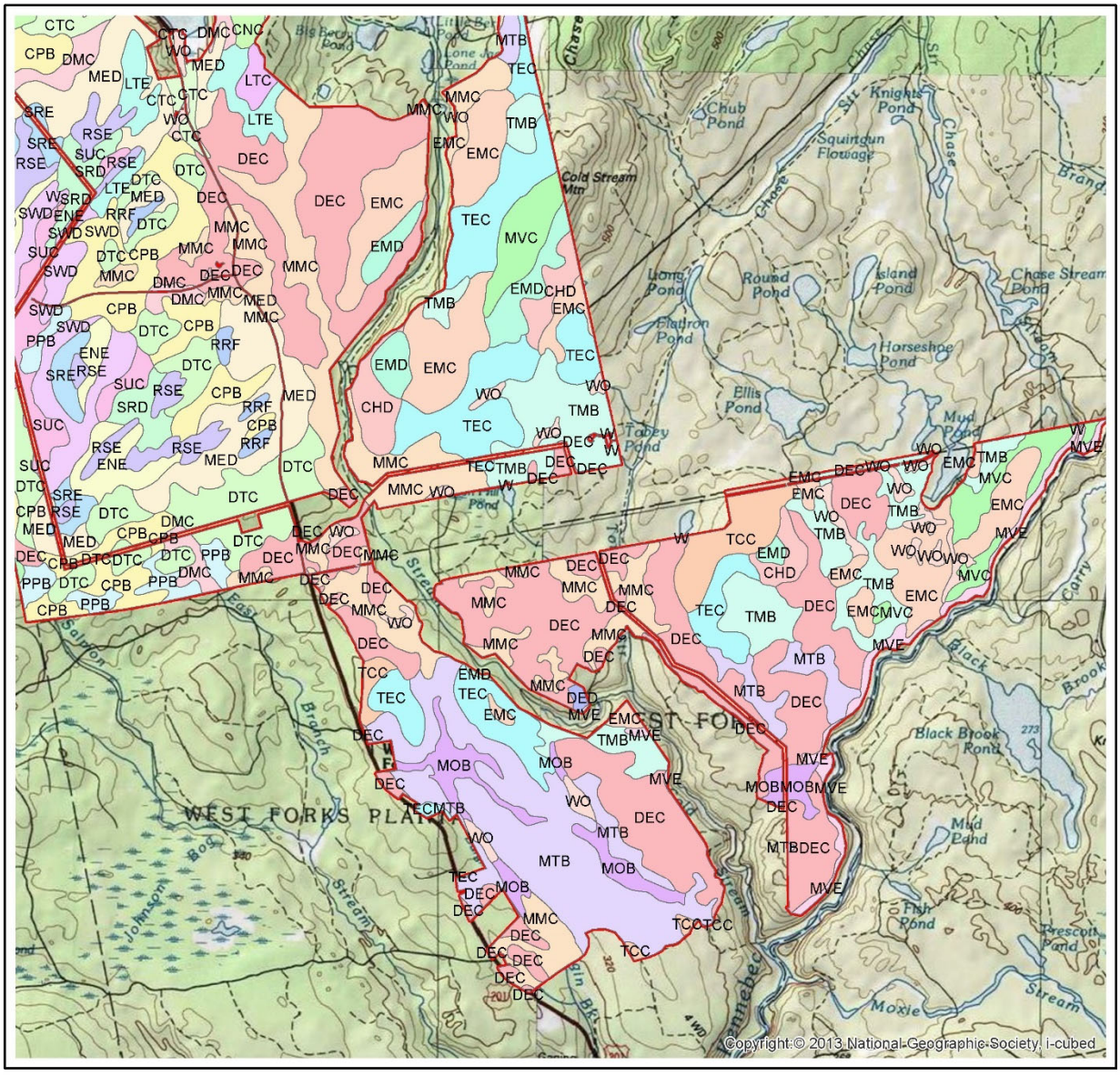
N

0 7,000 14,000 Feet

Note: Not a Survey Map

Weyerhaeuser

NRCS Soils Map - South Half
NECEC Upper Kennebec CE - Protected Property



Legend

NECEC UKCE Footprint

USA Topo Maps

N

0 7,000 14,000 Feet

Note: Not a Survey Map

Weyerhaeuser

Map Unit Legend

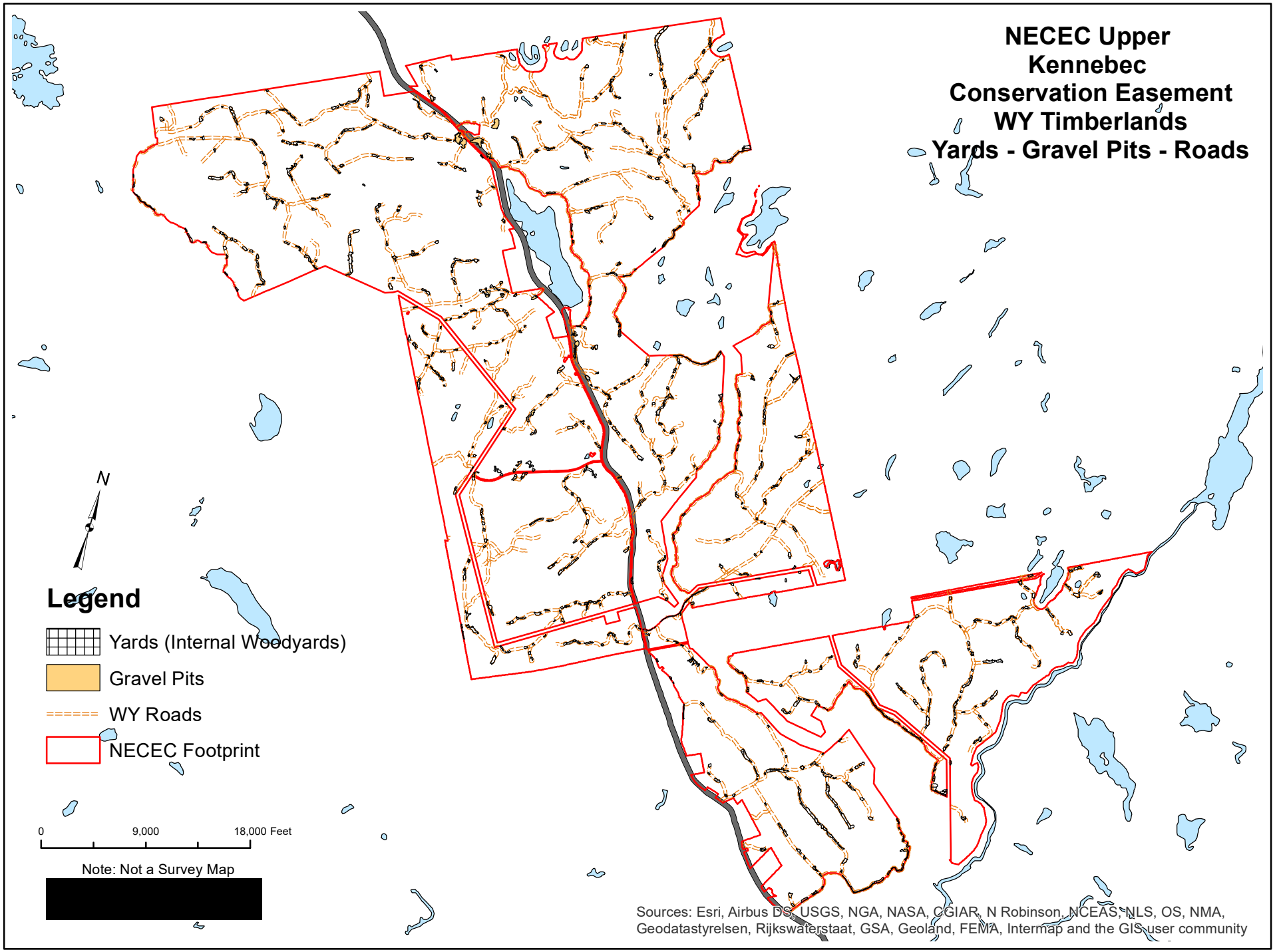
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CLD	Chesuncook-Telos association, 15 to 35 percent slopes, very stony	0.3	0.0%
ECC	Chesuncook-Elliottsville-Telos association, 3 to 15 percent slopes, very stony	0.1	0.0%
LNE	Lyman-Tunbridge-Abram complex, 15 to 35 percent slopes, rocky	1.1	0.0%
MUB	Monarda-Telos complex, 0 to 8 percent slopes, very stony	3.1	0.0%
MVC	Monson-Elliottsville-Telos complex, 3 to 15 percent slopes, very stony	1.0	0.0%
RSE	Ricker-Saddleback association, very steep	6.0	0.0%
SAE	Saddleback-Mahoosuc-Sisk association, very steep, very stony	0.1	0.0%
THC	Telos-Chesuncook association, 3 to 15 percent slopes, very stony	1.4	0.0%
Subtotals for Soil Survey Area		**12.9**	**0.0%**
Totals for Area of Interest		**50,062.3**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ACB	Adams-Croghan association, 0 to 8 percent slopes	2.0	0.0%
CHD	Chesuncook-Elliottsville-Telos association, 15 to 35 percent slopes, very stony	541.3	1.1%
CKC	Chesuncook-Telos association, 15 to 35 percent slopes, very stony	197.9	0.4%
CNC	Colonel-Peru-Pillsbury association, 3 to 15 percent slopes, very stony	1,935.4	3.9%
CPB	Colonel-Pillsbury-Peru association, 0 to 8 percent slopes, very stony	3,799.2	7.6%
CTC	Colton-Adams complex, 3 to 15 percent slopes	318.0	0.6%
CVC	Colton-Hermon association, 5 to 15 percent slopes	0.9	0.0%

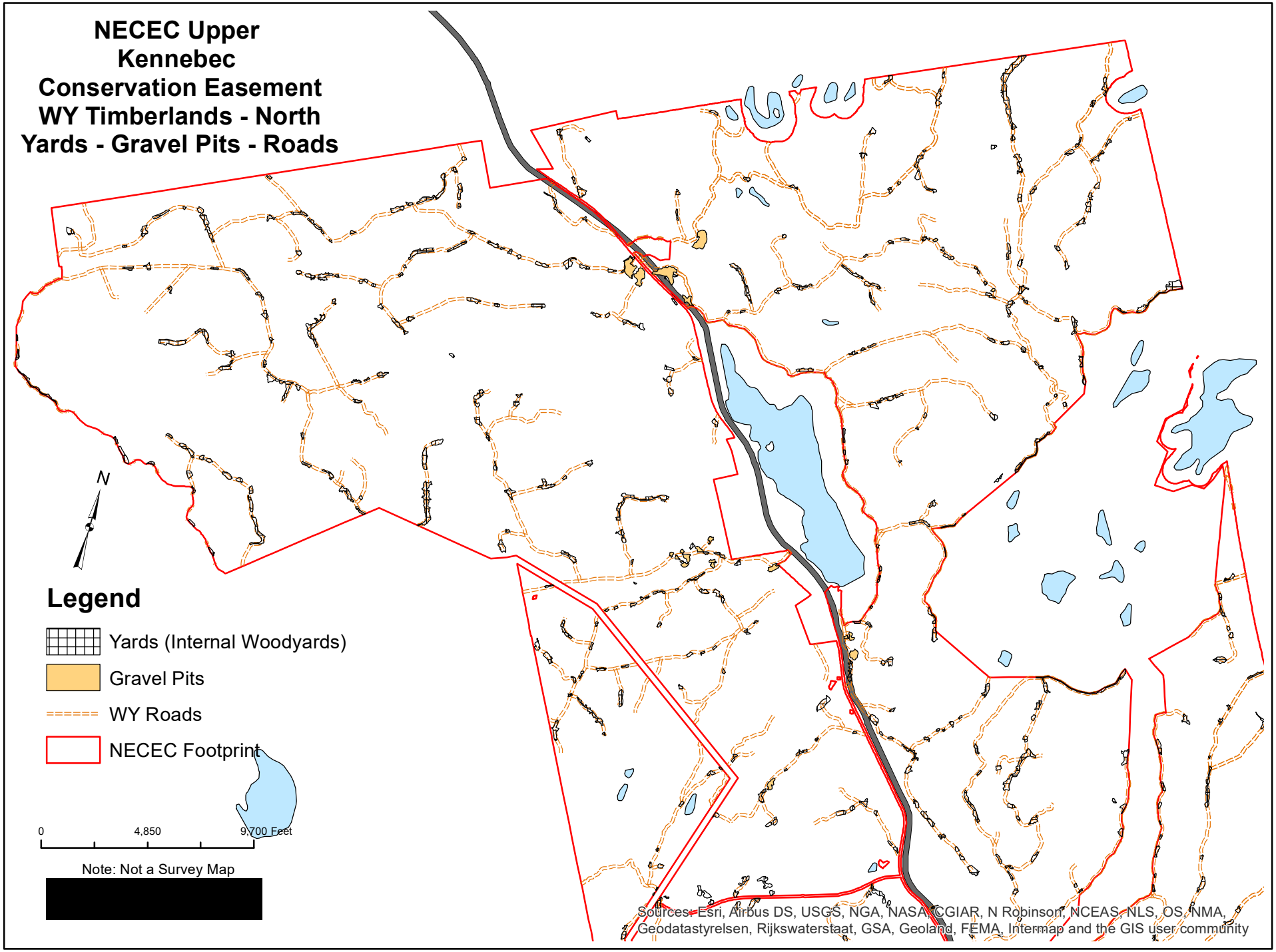
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DEC	Danforth-Elliottsville association, 3 to 15 percent slopes, extremely stony	6,533.0	13.0%
DED	Danforth-Elliottsville association, 15 to 30 percent slopes, extremely stony	176.2	0.4%
DMC	Peru-Colonel-Marlow association, 3 to 15 percent slopes, very stony	3,140.6	6.3%
DTC	Peru-Colonel-Rawsonville association, 3 to 15 percent slopes	3,057.1	6.1%
EMC	Elliottsville-Monson complex, 3 to 15 percent slopes, very stony	2,260.3	4.5%
EMD	Elliottsville-Monson complex, 15 to 30 percent slopes, very stony	514.5	1.0%
ENE	Enchanted-Mahoosuc association, 30 to 80 percent slopes	627.0	1.3%
HSC	Hermon-Skerry association, 0 to 15 percent slopes, extremely stony	0.0	0.0%
LAC	Hogback-Abram complex, 4 to 25 percent slopes	207.3	0.4%
LAE	Hogback-Abram complex, 15 to 60 percent slopes	1,480.5	3.0%
LTC	Hogback-Rawsonville complex, 4 to 25 percent slopes	3,294.3	6.6%
LTE	Hogback-Rawsonville complex, 20 to 60 percent slopes	1,379.5	2.8%
MDD	Marlow-Peru association, 15 to 35 percent slopes, very stony	319.1	0.6%
MED	Marlow-Peru-Rawsonville association, 12 to 30 percent slopes	2,180.2	4.4%
MKC	Masardis-Adams complex, 3 to 15 percent slopes	631.1	1.3%
MMC	Masardis-Danforth-Peacham association, 0 to 15 percent slopes, extremely stony	2,657.7	5.3%
MOB	Monarda-Burnham complex, 0 to 3 percent slopes, very stony	622.3	1.2%
MTB	Monarda-Telos complex, 0 to 8 percent slopes, very stony	2,794.9	5.6%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MVC	Monson-Elliottsville-Knob Lock complex, 8 to 30 percent slopes, very rocky	674.6	1.3%
MVE	Monson-Elliottsville-Knob Lock complex, 30 to 60 percent slopes, very rocky	271.3	0.5%
PPB	Pillsbury-Peacham association, 0 to 8 percent slopes, very stony	477.4	1.0%
RRF	Ricker-Rock outcrop complex, 3 to 80 percent slopes	272.0	0.5%
RSE	Ricker-Saddleback-Rock outcrop complex, 20 to 60 percent slopes	792.3	1.6%
RUB	Roundabout-Croghan association, 0 to 8 percent slopes	232.0	0.5%
SRD	Saddleback-Ricker complex, 10 to 50 percent slopes	396.3	0.8%
SRE	Saddleback-Ricker complex, 25 to 60 percent slopes	632.6	1.3%
SSE	Saddleback-Sisk-Rock outcrop association, 20 to 45 percent slopes	11.4	0.0%
SUC	Surplus-Bemis association, 5 to 15 percent slopes	524.4	1.0%
SWD	Surplus-Sisk association, 12 to 30 percent slopes	734.6	1.5%
TCC	Telos-Chesuncook association, 3 to 15 percent slopes, very stony	1,237.1	2.5%
TEC	Telos-Chesuncook-Elliottsville association, 3 to 15 percent slopes, very stony	2,087.2	4.2%
TMB	Telos-Monarda-Monson association, 0 to 8 percent slopes, rocky	1,867.1	3.7%
W	Water bodies	16.3	0.0%
WO	Bucksport and Wonsqueak mucks, 0 to 2 percent slopes	1,152.1	2.3%
Subtotals for Soil Survey Area		**50,048.7**	**100.0%**
Totals for Area of Interest		**50,062.3**	**100.0%**

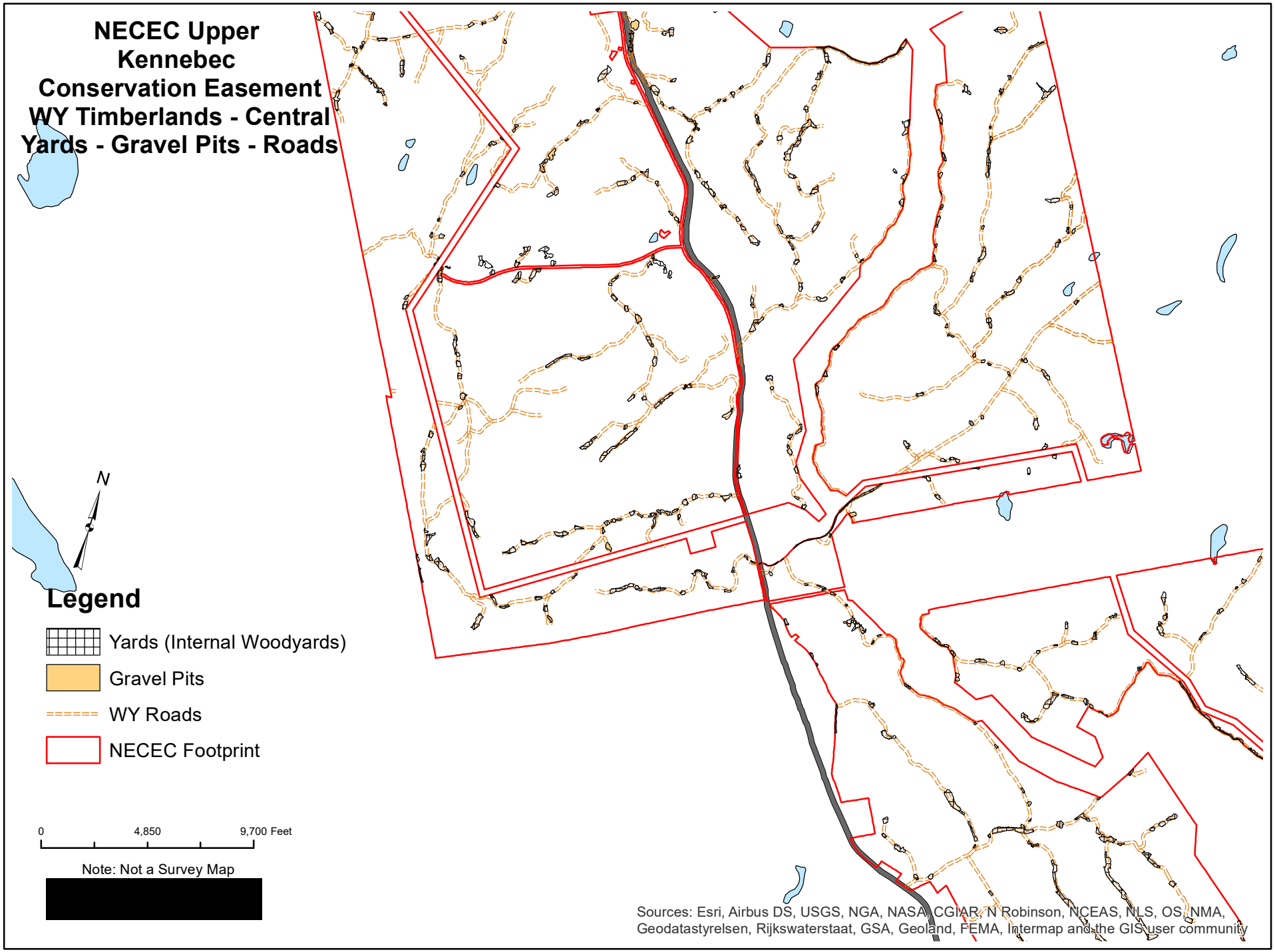
Appendix F: Forest Management Roads & Landings on Protected Property

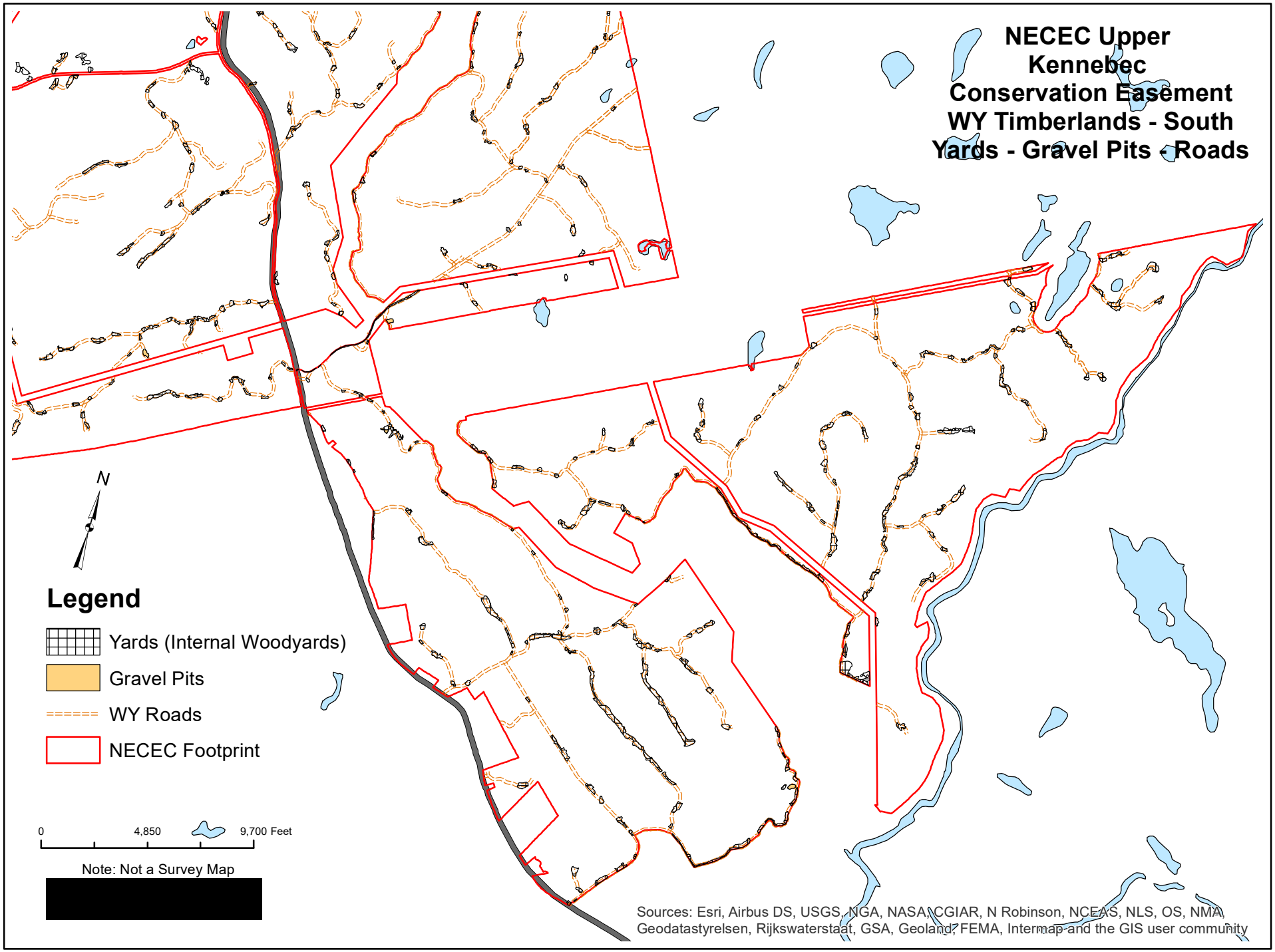

NECEC Upper
Kennebec
Conservation Easement
WY Timberlands
Yards - Gravel Pits - Roads
N
Legend
Yards (Internal Woodyards)
Gravel Pits
WY Roads
NECEC Footprint
0
9,000
18,000 Feet
Note: Not a Survey Map
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

NECEC Upper Kennebec Conservation Easement WY Timberlands - North Yards - Gravel Pits - Roads

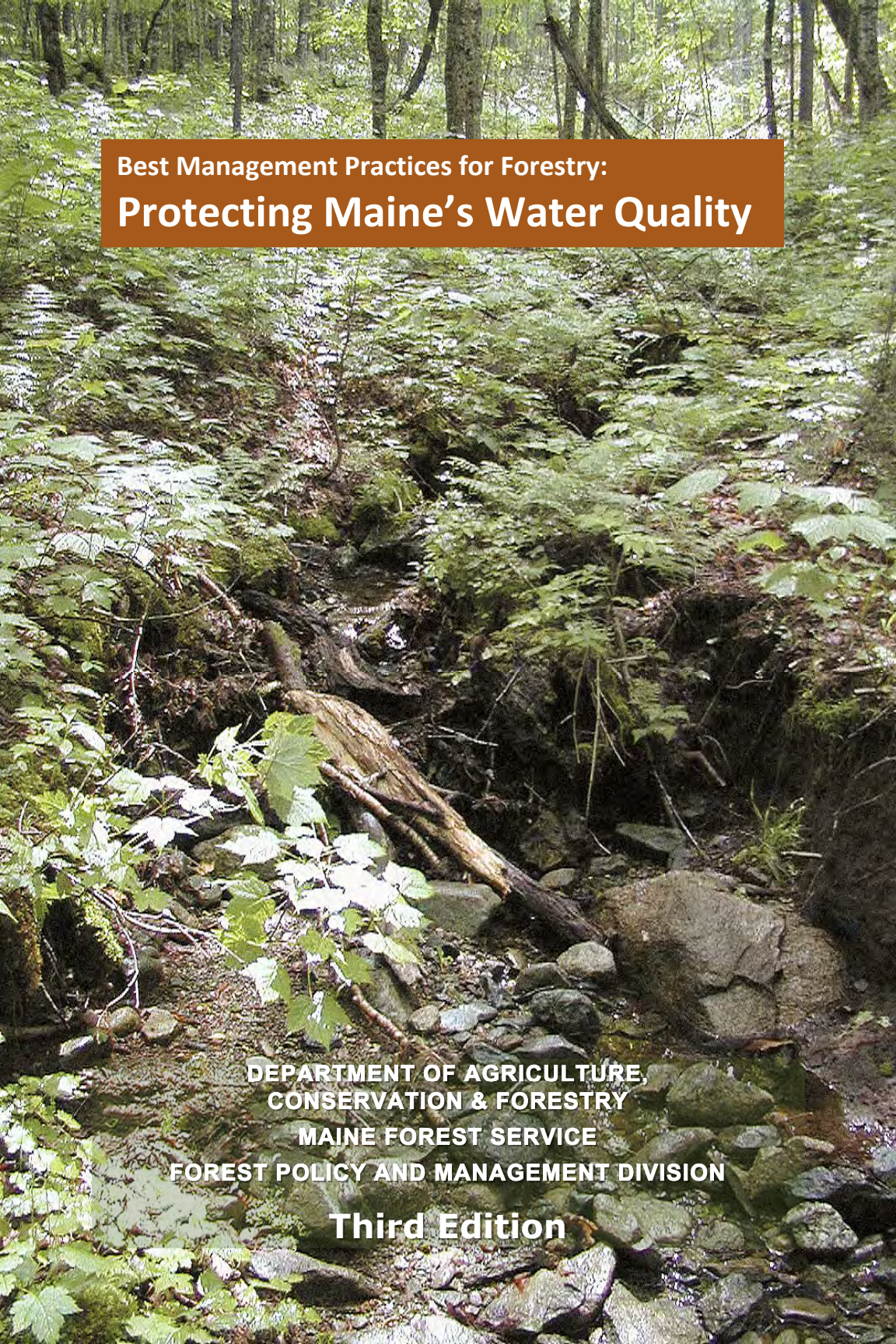


NECEC Upper Kennebec Conservation Easement WY Timberlands - Central Yards - Gravel Pits - Roads




NECEC Upper Kennebec Conservation Easement WY Timberlands - South Yards - Gravel Pits - Roads
N
Legend
Yards (Internal Woodyards)
Gravel Pits
WY Roads
NECEC Footprint
0
4,850
9,700 Feet
Note: Not a Survey Map
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Appendix G: Best Management Practices (BMP) Standards



Best Management Practices for Forestry:
Protecting Maine's Water Quality

DEPARTMENT OF AGRICULTURE,
CONSERVATION & FORESTRY

MAINE FOREST SERVICE

FOREST POLICY AND MANAGEMENT DIVISION

Third Edition

The Maine Forest Service

The Maine Forest Service was established in 1891 to ensure Maine's citizens the greatest economic and social benefits from the trees and forestlands of the state.

The primary responsibilities of the Maine Forest Service include:

To develop through information, education and formal publications a greater public awareness and appreciation of forests as Maine's basic economy and renewable resource;

To provide advice and assistance in forest management to woodland owners;

To maintain and improve the scenic beauty, wildlife habitat and recreational values of Maine;

To encourage and promote appropriate forestland management practices;

To protect Maine's forests from fire, insects, diseases, and other natural enemies; and

To enforce Maine's forestry laws and rules by preventing violations, intervening with potential problems and, as a last resort, take enforcement action.

3rd Edition
January 2017

Printed in Maine on certified paper under Appropriation 014 01A 2662 12

ACKNOWLEDGEMENTS FOR THE FIRST EDITION

This document is a publication of the Maine Department of Agriculture, Conservation and Forestry's Maine Forest Service. It fulfills a portion of the state's commitment under its Nonpoint Source Pollution Program (38 M.R.S. §410), and replaces the MFS publication "Best Management Practices Field Handbook" published in 2010.

This document was developed by the Maine Forest Service's Forest Policy and Management Division, with the assistance of FORAT (Forestry Advisory Team), an advisory group with broad representation from Maine's forestry community.

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Partial funding for this project was provided by a Maine Outdoor Heritage Fund grant and funds from Maine's Coastal Zone Program. The manual was developed and printed under appropriation #014.04A.0240.552.

The Maine Forest Service would like to thank the hundreds of loggers, foresters, and landowners whose work in forest management and harvesting helped shape this manual. They demonstrate their professionalism every day.

3RD EDITION EDITS: Rondi Doiron, Greg Miller, Dan Jacobs, Don Mansius and Tom Gilbert.

TABLE OF CONTENTS

SECTION 1 INTRODUCTION

INTRODUCTION

WHAT THIS HANDBOOK IS

This handbook describes Best Management Practices, or BMPs, for protecting water quality during forest harvests. The BMPs include a wide range of recommended techniques that can be used before, during, and after logging operations. Loggers, foresters, and scientists from Maine and other states have developed these techniques from their own practical experience and research.

This handbook is for woodlot owners, loggers, foresters, and others involved in harvest operations. The handbook will help you understand, identify, design, and implement water quality protection measures while meeting other harvest objectives.

This book will help you to:

- Understand how BMPs work. It is more effective, cheaper, and easier to prevent pollution than to fix problems after they occur. When you understand the principles behind BMP techniques, you will be able to anticipate and prevent problems before they end up costing you time and money.

- Decide which BMPs to use. Harvest sites can vary significantly, and different techniques are appropriate to different sites. By applying BMP principles, you will be able to use your own judgment and this handbook to select the most appropriate and effective BMPs for a particular site.

WHAT THIS HANDBOOK IS NOT

BMPs are not the same as regulations. Best Management Practices are recommended procedures that, when used appropriately, will result in the greatest protection of the environment over the course of the operation. Regulations prescribe required, minimally acceptable practices. Some BMPs may be mandatory in some situations; others may be voluntary, depending on the site and local and state laws.

This handbook is not a complete how-to manual for installing BMPs. Please see “Section 4: For More Information” for titles of other documents that provide technical details on BMP installation.

This handbook focuses on water quality BMPs. There are BMPs that protect wildlife habitat, soil integrity and productivity, aesthetics, and other aspects of the forests. Although these values are important, they are not the focus of this manual.

HOW TO USE THIS MANUAL

In order to decide how and when to use BMPs, it's important to understand how they work to protect water quality. "Section 1: What is Water Quality?" explains different characteristics of water quality, how harvesting practices can affect them, and where it is most critical to use BMPs.

"Section 2: Fundamental BMPs" discusses fundamental BMP principles and key steps toward the overall goal of protecting water quality. These principles give you an overview of the most important things to keep in mind before, during, and after a harvest.

"Section 3: BMPs for Every Stage" lists specific BMPs for stream crossings, truck roads, log landings, skid trails, and harvesting areas. Under each of these headings is a discussion of the planning, construction, maintenance, and closeout BMPs applicable to that topic.

Throughout the manual, you will also find STOP signs that will alert you to potential legal requirements. ⚠ signs will point out important topics that shouldn't be overlooked. Each section is color-coded on the edge of the page to make it easier for you to find information about a specific topic.


SECTION 3 BMPs FOR EVERY STAGE

BUILD IT RIGHT

PERMANENT CROSSINGS

BMPs

1 If possible, build crossings when streams are dry or at low water. If considerable excavation is necessary during periods of regular or high flow, temporarily divert the water while installing the crossings.

STOP Permanent crossings may require permits, especially if water must be diverted during installation.

2 Install crossings and approaches using a "no-grub zone" at least the width of the filter area, wherever possible.

- Minimize excavation on stream banks and approaches.
- Construct road approaches using fill (instead of grubbing), leaving the forest floor undisturbed, especially outside the road prefile. Consider surfacing with clean gravel or stone. This will stabilize the road surface, prevent it from eroding directly into the stream, and keep mud from being tracked onto the crossing structure.
- Use geotextile and fill on unstable soils or during wet weather.
- Set abutments back from the stream's edge.

3 Design bridges using solid decking or other features to minimize the amount of material that falls through the deck and into the stream.

Two types of permanent crossings.

45

HOW BMPs PROTECT WATER QUALITY

WHAT IS WATER QUALITY?

Forest areas in and around waterbodies are complex systems and provide habitat for a wide range of plants and animals. These forest areas, and the waterbodies in them, are the setting for different processes that provide food, water, shelter, breeding space, and other needs. For our purposes, "water quality" refers to the characteristics of water in nature that support life. These include the natural chemical, physical, and biological aspects of streams, rivers, ponds, lakes, and non-forested wetlands. The chemical properties of water include pH, dissolved oxygen, nutrients, and the presence of chemical pollutants. The physical properties of water include such things as turbidity (how clear or cloudy the water is) and temperature. In addition, the physical characteristics and natural processes of waterbodies are important aspects of water quality. Examples include stable channels, the transport of nutrients, the volume and speed of the water, the streambed material, and sticks and logs that have fallen into streams naturally.

Forest streams, lakes, and wetlands typically have excellent water quality. Forestry operations that use best management practices can protect these waterbodies' natural ability to support life. By preventing stream sedimentation, such operations can maintain streambed properties and the clean water that allows fish—and the aquatic insects they depend on—to feed and spawn. Leaving trees that shade and provide leaf litter to waterbodies limits changes in water temperature and chemical characteristics that could reduce the ability of some species to survive and reproduce. These are just the most commonly understood examples of how maintaining the properties of water in forests can protect aquatic habitats.

Although water quality is a complex subject, BMPs are intended as relatively simple, practical steps that protect water quality. Most BMPs in this manual address turbidity by keeping sediment out of streams. Several other BMPs preserve the physical integrity of waterbodies and their natural processes. If these issues are addressed, most other aspects of water quality will be protected, too.

KEY ISSUE

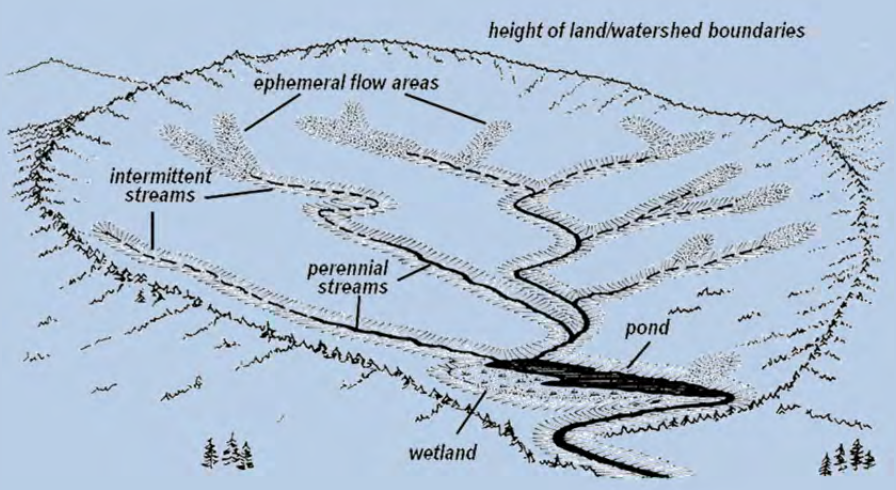
Water Movement

Maine has thousands of lakes and ponds, large areas of forested and non-forested wetland, and thousands of miles of streams and rivers. All these forest waterbodies, and the areas that drain to them, are connected by moving water. Most of the water in the forest comes from rain or snowmelt which is either absorbed into the soil, flows over the ground, or enters stream channels, flowing downhill.

WATERSHED

A **watershed** is all the land and waterbodies from which water drains to a given point. You can define a watershed for an entire lake, for a stream at a crossing site, or for a river where it reaches the ocean. Watersheds range in size from just a few acres (for a small stream), to thousands of acres (for a large river). All land is part of some watershed.

It is critical to understand where water is coming from and draining to in the watershed where logging is planned. The amount of cutting or road construction at higher elevations can affect the amount and timing of runoff at lower elevations within the same watershed. When you know where, when, and how much water flows in the harvest area, you will be able to determine the best locations for roads and trails, and what types of BMPs you will need to control water movement.



The watershed of a pond.

In this manual, “waterbodies” includes streams, rivers, lakes, ponds, and wetlands, as well as coastal areas. BMPs are recommended primarily for those areas where water is at or near the surface (streams, lakes, or wetlands), and where runoff can move directly into surface waterbodies. These waterbodies and related areas are defined and illustrated below.

EPHEMERAL FLOW AREAS

Ephemeral flow areas are small drainage areas that flow into streams, but have no defined, continuous channel. Examples are low-lying depressions, or swales with an intact forest floor. Soils in these areas may quickly become saturated during rainy periods, storms, or snowmelt. Surface water flows in these low areas over saturated soil without forming a channel. Water from ephemeral flow areas may carry sediment or other materials directly into streams. Ephemeral flow areas change in size in response to the soil and weather conditions, and are the proximate source of much of the water that enters small streams.

Ephemeral flow areas are small drainages, with no defined channel, where water flows into streams during wet periods.

STREAMS

Streams are natural water channels that:

- may flow year-round or only part of the year;
- have a defined channel and banks;
- are relatively continuous and connected with larger surface waters; and
- have a streambed where flowing water has exposed the mineral bottom of soil, sand, gravel, ledge, or rock.

Forest streams in Maine vary widely in how much water they carry, how steep they are, the shape of the streambed or channel, how much area they drain, and when they flow. **Perennial streams** flow year-round and range from small brooks to large rivers; **intermittent streams** flow only a few months of the year, and/or during wet seasons.

Streams can vary widely, but all have a defined, continuous channel, a streambed with exposed soil, and carry water at least part of the year.

The **normal high water mark** is the place on the stream bank where the highest water levels typically occur, often during spring runoff. You can identify it from features like undercutting of the bank; a change in the type of vegetation; exposed roots that do not penetrate beyond a certain level; root scars; and water stains on stems, roots, or other vegetation.

One indication of the normal high water mark is undercutting or scouring of the bank.

WETLANDS

Wetlands are areas where soils are saturated or flooded a significant part of the year, and where water-loving plants are often found. Wetland soils usually have developed special characteristics, and often have a significant amount of water moving below the surface.

Forested wetlands are dominated (or potentially dominated) by trees taller than 20 feet. Forested wetlands vary widely in their characteristics, often have relatively little water directly at the surface, and have indistinct borders. They may require considerable expertise to identify. Forested wetlands are often managed for timber, with roads and trails crossing them.

Non-forested or **open wetlands** are not dominated by trees, though they may have some scattered trees, mostly less than 20 feet tall. They have water at or near the surface at least part of the year, and may have a more or less distinct border defined by the surrounding forest. The high water and organic content of wetland soils make them considerably weaker than upland soils and difficult to work in. Non-forested wetlands are not managed for timber, and should be crossed only when they cannot be avoided.

Vernal pools are a type of wetland, typically forested, which provide specialized habitat and deserve special attention. Separate guidelines for protecting vernal pool habitat are available from the Maine Forest Service.

forested wetlands

non-forested wetlands

vernal pools

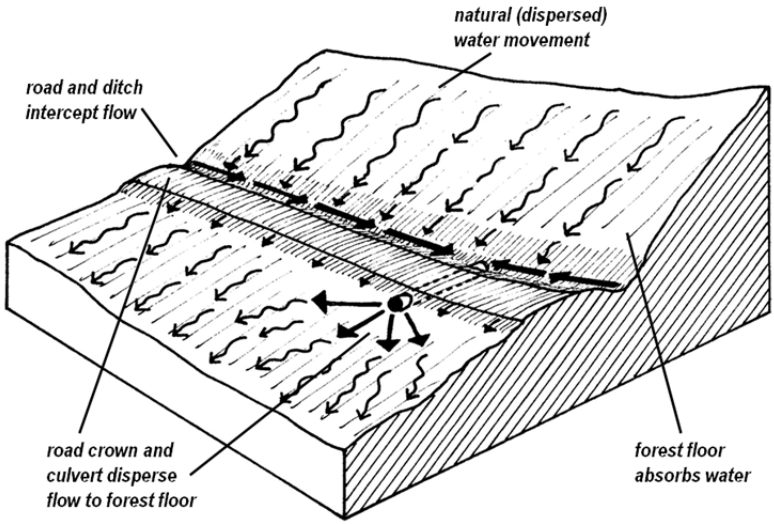
HOW HARVESTING AFFECTS WATER QUALITY

HOW HARVESTING CHANGES WATER FLOW

Forest harvests can directly impact water quality by affecting how water flows through an area. In particular, constructing roads, trails, landings, or drainage systems can:

- **Reduce the soil's absorbency.** This can occur any time the forest floor is disturbed, removed, compacted, or otherwise damaged.
- **Increase soil erosion.** The opportunity for soil to be carried away by runoff increases greatly when mineral soil is exposed or fill is used.
- **Divert water flows.** Roads and trails can block or intercept water moving over or through the soil. The more water that accumulates, the greater the chance that it will form a channel and start eroding soil. Sometimes harvesting can cause streams to erode a new channel by blocking the stream's flow with logs or debris.
- **Concentrate water flows.** Roads, trails, landings, and their associated drainage structures can collect and funnel runoff, creating rills or gullies. In these situations, water erodes and transports exposed soil in its path.
- **Diminish the benefits of vegetation next to waterbodies.** Harvesting may reduce shade on the water's surface, reduce the amount of natural woody debris, or eliminate leaf litter that is an important food source for aquatic life. In addition, timber harvests that remove a significant percentage of the trees in a watershed can increase the amount of water moving through the soil into streams, and in some instances, increase flooding.

Usually, it is impossible to avoid disturbing some soil or concentrating some flowing water during a harvest. The important point to remember is to avoid these disturbances as much as possible, and to use BMPs to prevent them from resulting in sedimentation or erosion.



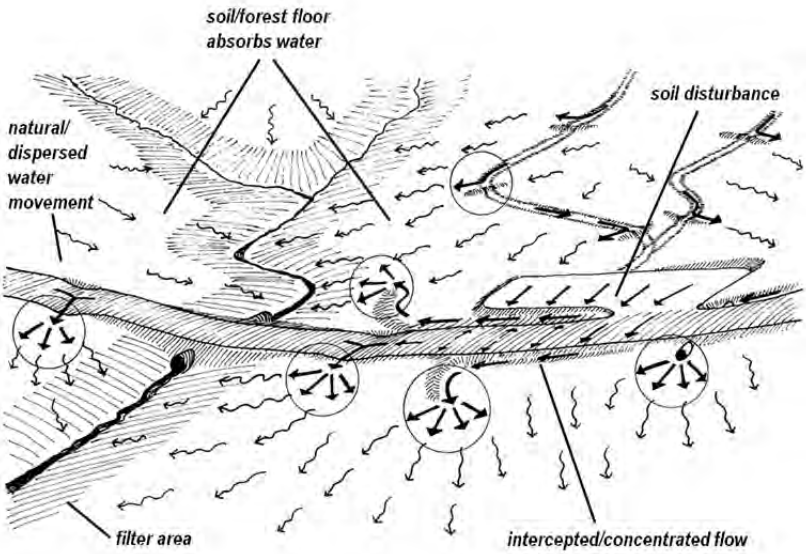
Harvesting operations intercept natural water movement and concentrate it in ditches or on the road/trail surface.

DRAINAGE SYSTEMS OR STRUCTURES are techniques used to get water off the road, trails, or landing. These can include the road crown, ditches, turnouts, cross-drainage culverts, water bars, etc.

WHAT DO BMPs DO?

BMPs are designed to mimic or protect the natural functions of forests. BMPs can absorb or disperse runoff, retain soil nutrients, filter sediment, prevent large changes in water temperature, and contribute organic material to surface waters.

- **BMPs minimize the risk of sediment and other pollutants getting into waterbodies.** Sediment—soil, dirt, silt, sand, mud—is the primary type of water pollution from forestry operations.
- **BMPs maintain the natural flow of water in streams and wetlands.** They avoid blockages, keep water flowing in its natural path, and prevent damage to the streambed and banks.
- **BMPs protect shoreland vegetation.** Some practices simply preserve enough of the forest so that it continues to function normally: shading the waterbody and stabilizing water temperatures, maintaining the soil's natural functions, and contributing organic matter that serves as habitat and a food source to aquatic plants and animals.



One way BMPs minimize impacts to water quality is by dispersing concentrated water flow. Circles indicate where BMPs disperse flow to the undisturbed forest floor.

CATERPILLAR

FUNDAMENTAL BMPs

Most BMP techniques are based on a few basic principles. This section provides an overview of these fundamental BMPs and how they protect water quality.

Understanding these principles will enable you to select or adapt the BMPs that are the most appropriate and effective. Think of these principles as goals. Any single practice or combination of practices that effectively achieves one or more of these key goals could be considered an appropriate BMP.

1. DEFINE OBJECTIVES AND RESPONSIBILITIES

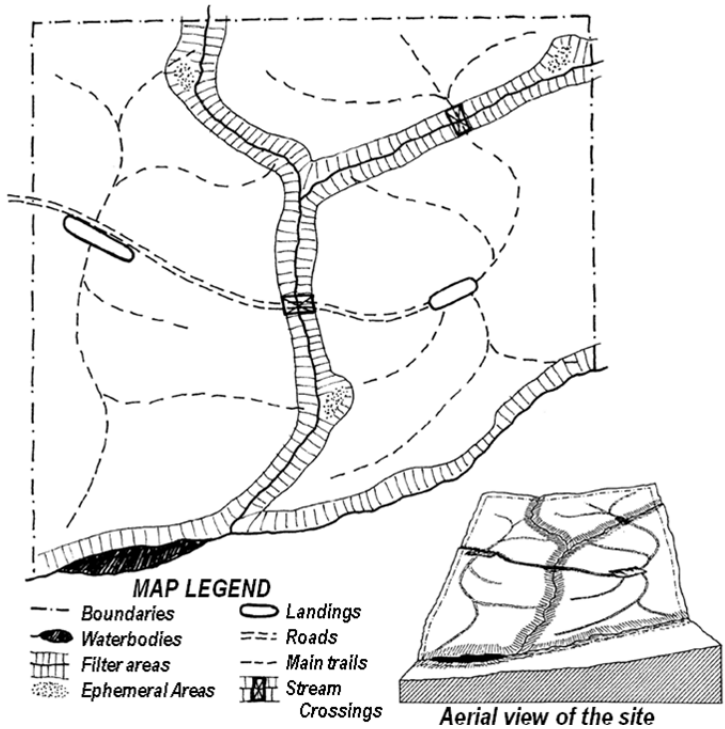
- **Determine the harvest objectives with the landowner, forester, and logger.** The first step in planning, prior to beginning work, is to communicate with everyone involved what the harvest objectives are. Discuss what's going to be cut, where, and the desired condition of the remaining forest.
- **Decide who is responsible for BMPs.** You will want to agree in advance (and in a written contract) who is responsible for implementing the BMPs, including deciding when to operate, locating streams, laying out the operation, and planning and maintaining the BMPs.
- **Find out what legal requirements apply to waterbodies in the harvest area.** The basic legal requirement in Maine is to keep pollution—including mud, silt, rock, soil, brush, or chemicals—out of the water. When working near waterbodies, find out what town, state, or federal standards apply, and if permits are needed.

Know the laws! Landowners, foresters, and loggers should determine what laws apply on a particular job. However, it is Maine landowners who are responsible *by state law* for preventing mud, sediment, and other pollutants from entering waterbodies. This manual does not replace legal standards, and reading it is not a substitute for

2. PRE-HARVEST PLANNING

Pre-harvest planning is a good business practice and avoids many problems. Planning will help reduce costs, make the job more efficient, protect roads and trails that will stay in place after the job, leave the job looking better, *and* protect water quality.

- **Determine the harvest area limits and property boundaries on the ground. Know whose responsibility it is to identify the property boundaries correctly.** While not essential to protecting water quality, locating property boundaries is common sense and good planning. There may be survey pins, blazes, wire fences, or stone walls that mark boundaries or property corners. Forest type maps, soil or topographic maps, or aerial photos help, too.

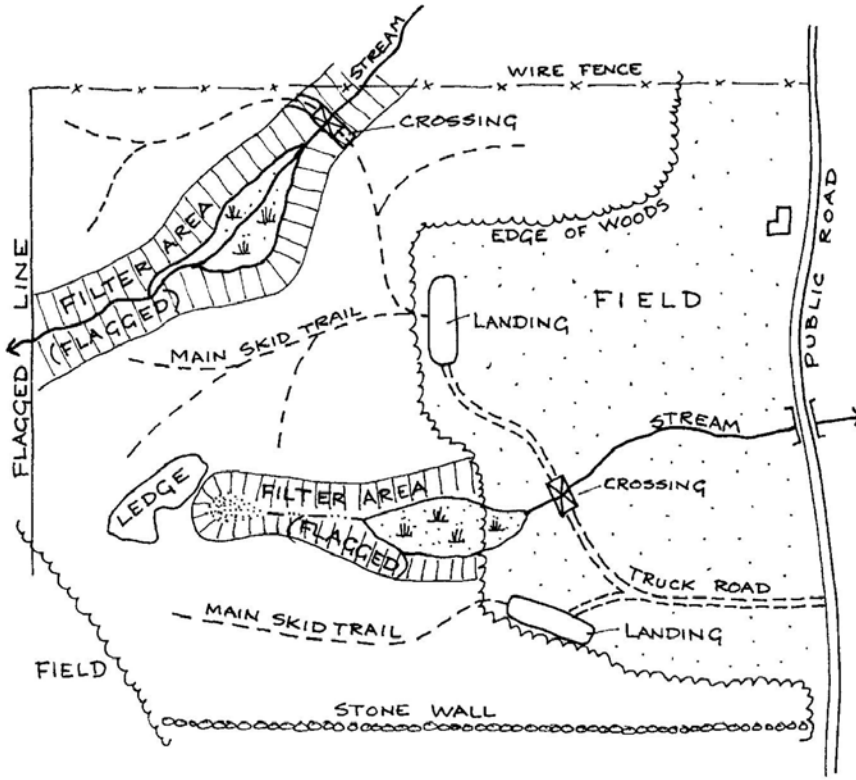


Example of a map showing planning and layout on a large lot.

When in doubt, stop! Get more information or professional advice. Call The Maine Forest Service at (800) 367-0223 (in-state only) or (207) 287-2791 for answers and referrals to professionals who can help.

- **Identify streams, lakes or ponds, wetlands, and other features on maps and on the ground.** Maps and aerial photographs can help identify features like waterbodies, steep slopes, or poorly drained soils. Walking the property to locate important features on the ground is essential. If possible, do your planning on bare ground in wet seasons when surface water is visible.
- **Identify the areas where you need BMPs.** Forest harvesting BMPs are most critical in and immediately next to waterbodies including intermittent and perennial streams, lakes or ponds, wetlands and coastal areas—wherever direct impacts to surface water may occur. You may also need to use BMPs in other areas of the watershed where flowing water could be substantially altered or carry sediment into these waterbodies.
- **Lay out the harvest operation on the ground.** Harvest planning includes determining where operational features such as roads, stream crossings, landings, cut-and-fill areas, main skid trails, and particular BMPs will be needed. While on-site, make sure everyone involved in the harvest operation is aware of the layout—especially roads, skid trails, and filter areas next to waterbodies.

There is no substitute for laying out the harvest operation on the ground.



Example of a map showing planning and layout on a small lot.

- **Choose BMPs that are appropriate to the site conditions.** Most sedimentation occurs during short periods of heavy rain or snowmelt. How much rain falls during a storm, how much water streams carry, how stable the soils are, and what type of vegetation is present are all conditions that vary. BMPs that are sited, designed, and installed to anticipate adverse conditions work best.

- **Decide on BMPs for the entire harvest area and for closeout before beginning work.** BMP systems need not be complicated, but they require planning across the entire harvest area and over the entire duration of the operation, including closeout. Applying BMPs in one location can sometimes solve problems elsewhere on the site, or prevent problems after the operation is complete. When you understand the natural drainage system in the watershed, often you can use a combination of simple BMPs that are more effective— and cheaper—than more complex or expensive techniques.

- **Consider the needs of future operations on the same** property. Will roads, trails and landings be used again in five years, 15 years, or longer? Are there other areas of the property that can be accessed using the same roads? If you need to access the lot in the future, plan roads and trails accordingly. Otherwise, consider restricting vehicle access after the harvest. Because of the possibility of extreme weather conditions, it is important to design and close out roads properly. Identify which structures—such as culverts—will be left in place, and which will be removed. Considering the future can avoid problems and costly solutions.

3. ANTICIPATE SITE CONDITIONS

- **Time operations appropriately.** Harvesting under frozen, snow-covered, or dry conditions can minimize the need for additional BMPs. At the same time, a range of BMPs that are appropriately chosen, installed, and maintained can extend the harvest season. Use extra caution during fall and spring when streams are high and the ground is typically wetter—you may need to use additional BMPs to control the larger volume of water.

BMPs may extend the harvest season, reduce equipment wear and the amount of mud on logs, increase skidding efficiency, and protect your investment in roads and stream crossings.

Site conditions both during and after the harvest are likely to change.

- **Determine whether previous operations in the harvest area created conditions that are impacting—or could impact—water quality.** Old roads, log landings, and skid trails can be reused or upgraded. However, in some situations, avoiding or retiring them is a better choice. Using old roads, landings, and trails may be cheaper in the short run, but may be more costly to fix or maintain later. Pre-existing conditions may also influence your choice of BMPs.

- **Plan to monitor, maintain, and adjust BMPs as needed, especially to deal with seasonal or weather-related changes.** After installation, many BMPs require maintenance or modification. Conditions—such as the amount of water flowing in streams, soil moisture, or the depth of frost—can change quickly, even with one storm. Take into account how conditions may change, and maintain or install additional BMPs as needed. Determine who will be responsible for this work. In many instances, the landowner will want to periodically check and maintain BMPs that have been installed after harvesting is done. This often prevents washouts and a loss of access while protecting water quality at the same time.

4. CONTROL WATER FLOW

- **Understand how water moves within and around the harvest area, and decide how water flow will be controlled.** Concentrated flows of water on roads, skid trails, landings, and in drainage systems develop more force and a greater ability to erode soil and carry sediment. It is easiest and most effective to control small volumes of water, before they converge and accumulate into concentrated flows.

- **Slow down runoff and spread it out.** Many BMPs work by directing small amounts of water into areas of undisturbed forest floor where it can be absorbed.

Properly sized ditches capture and slow down runoff.

- **Protect the natural movement of water through wetlands.** Wetlands play an important role in the environment by storing water in wet periods and slowly releasing it back into the surrounding ground and streams. Logging roads and trail crossings can affect the flow of water within or through a wetland. This changes how much water the wetland stores, the degree of flooding that occurs, and the rate at which water leaves the wetland. Such impacts can affect the health of the wetland and waterbodies downstream.

5. MINIMIZE AND STABILIZE EXPOSED SOIL

Limiting soil disturbance and stabilizing areas where mineral soil is exposed are among the most important BMPs for preventing erosion. These practices are most critical in and around filter areas—forest areas bordering waterbodies. A detailed discussion of filter areas, how best to work in them, and soil stabilization starts on page 22. Generally speaking, there are two major objectives:

- **Minimize disturbance of the forest floor, especially in filter areas.** The forest floor absorbs water and filters out sediment and other pollutants. Exposed soil, on the other hand, can erode very rapidly. Most of the sediment that ends up in streams near managed forests comes from exposed soil on roads, landings, and skid trails. Know where the filter areas are and how to protect their capacity to absorb and filter runoff.
- **Stabilize areas of exposed soil within filter areas and in other locations where runoff has the potential to reach filter areas.** Use BMPs during or immediately after the harvest to prevent exposed soil or fill from eroding. These techniques and materials can be used near waterbodies, at stream crossings, road cut-and-fills, ditches, landings, and skid trails. In some situations, you may need to seed and/or plant vegetation in order to stabilize the soil.

6. PROTECT THE INTEGRITY OF WATERBODIES

- **Protect stream channels and banks.** Blocking or altering streams (with slash, for instance) may keep fish from swimming past the blockage. Damaged stream banks erode quickly, causing sedimentation and siltation. By protecting the physical integrity of streams, BMPs prevent these problems.
- **Leave enough shoreland vegetation to maintain water quality.** BMPs maintain the benefits that nearby trees and plants provide waterbodies. Streamside vegetation shades the water, minimizing temperature changes. Live roots stabilize the banks and maintain the soil's physical and chemical properties. Trees along the banks drop leaf litter and woody debris that supply nutrients and become habitat for plants and animals in the stream. Shoreland vegetation plays an important role in maintaining water quality.

7. HANDLE HAZARDOUS MATERIALS SAFELY

For assistance with spills of hazardous materials, call the Department of Environmental Protection's Division of Response Services office nearest you:

Augusta (207) 287-7688
Bangor (207) 941-4570
Presque Isle (207) 764-0477
Portland (207) 822-6300

In an emergency, call
(800) 482-0777 (oils/fuels)
(800) 452-4664 (other chemicals)

- **Be prepared for any emergency.** Keep an emergency response kit and contact information at the site for fuel, oil, or chemical spills. Remember that fertilizers, herbicides, pesticides, and road chemicals (calcium chloride, road salt, etc.) are hazardous materials, too. Know whom to call for help with unexpected erosion, accidents, or other emergencies. Having a backup plan and being prepared for unexpected and special situations can help avoid or minimize negative impacts to water quality. Industry groups, equipment suppliers, and local and state government agencies all have specialists available to help. Refer to "Section 4. For More Information" on page 94 for agency names, addresses, and telephone numbers.

- **Use and store hazardous materials properly.** The best way to avoid accidental spills of hazardous materials is to store and handle them so that the chance of these types of emergencies occurring is minimized. You'll find several BMPs in this manual that describe how to do this, starting on page 90.

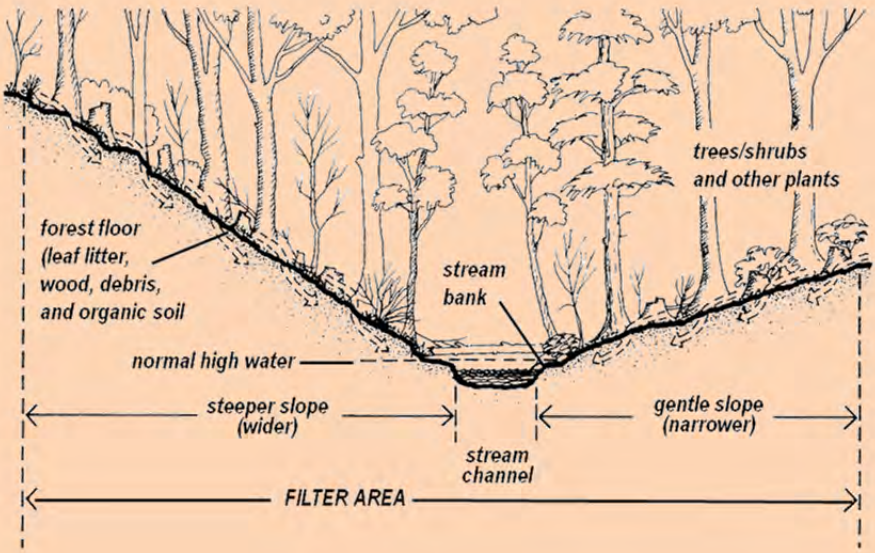
KEY ISSUE

Filter Areas

Filter areas, broadly speaking, are forested areas bordering waterbodies that provide important functions, especially filtering sediment and debris from runoff and preventing pollutants from reaching waterbodies. Filter areas have several components.

- The **banks** of streams (or other waterbodies) protect and contain the water channel.
- The **forest floor**—especially the leaf litter, woody debris, and organic soil layer—absorbs and filters water as it moves over and through the soil.
- **Trees and other vegetation** shade the water (minimizing changes in water temperature), stabilize the banks, and add woody debris and organic matter to the water and forest floor.

Limiting impacts to these components within a minimum distance from the waterbody (depending on slope) typically maintains these benefits and protects water quality.



WORKING IN FILTER AREAS

Forested filter areas are not "no-harvest" zones; you can often cut within them. You may also use logging equipment in filter areas if the forest floor is protected. However, it is important that you take extra precautions within filter areas to prevent water pollution.

Note that the filter areas described here may be wider or narrower than regulatory requirements for forestry activities.

Table A
Minimum Filter Area Width

Slope (%)	Width from High Water Mark (ft.)
0	25
10	45
20	65
30	85
40	105
50	125
60	145
70+	165

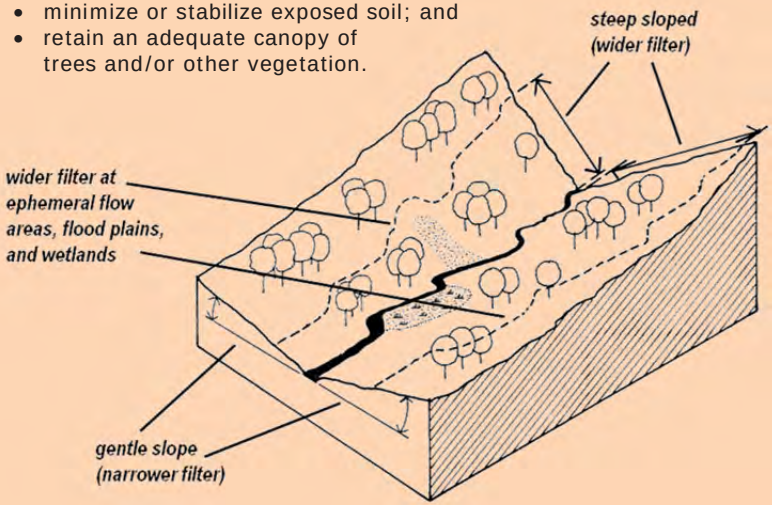
BMPs

1. **Determine what legal requirements you must meet when working near waterbodies.**

2. **Delineate filter areas next to streams, lakes and ponds, and non-forested wetlands.** Minimum recommended widths (from the normal high water mark) for filter areas appear in Table A.

3. **Apply BMP techniques for roads, landings and skid trails (described in later sections) when working in filter areas to:**

   - minimize damage to the stream channel and stream banks;
   - protect the forest floor next to streams and other waterbodies from disturbance;
   - disperse concentrated flows of water through the area;
   - minimize or stabilize exposed soil; and
   - retain an adequate canopy of trees and/or other vegetation.



The minimum filter width varies with slope and site conditions.

4 **Increase the width of the filter area and install more BMPs when local conditions call for it.** The recommended minimum filter area widths are based on the ability of the undisturbed forest floor to absorb water and filter sediment. The actual width needed for the filter area to be effective may be greater than the minimums listed in Table A, depending on the site conditions and planned activity. Examples of situations where it is best to designate a filter area wider than that stated in Table A include:

- **Ephemeral flow areas next to waterbodies.** Water from ephemeral flow areas may carry sediment or other materials directly into streams (especially during wetter seasons).
- **Forested wetlands and floodplains next to waterbodies.** Typically, these are wetter, weaker soils. They are more likely to develop ruts and produce rapid runoff into nearby waterbodies.
- **Water diversions that concentrate flow.** Culverts, ditches, and other drainage structures may increase the amount of water flowing into the filter area. They could also create a new channel through the filter area, reducing its effectiveness. In these cases, increasing the filter area width and making sure the drainage structures and BMPs are properly installed will help disperse the water.
- **Some stand conditions.** Some sites may warrant wider filter areas to maintain the wind-firmness of the stand or provide adequate shade on the waterbody.

Forest harvesting operations in both non-forested and forested wetlands may have legal requirements. However, the definitions of forested and non-forested wetlands vary in different federal, state, and local laws. Forestry activities may be exempt in some cases, but not in all. Know which law applies to your situation.

KEY ISSUE

Stabilization

STABILIZING EXPOSED SOIL

Stabilizing exposed soil is most important where sediment can be carried to waterbodies. Different materials may be used to reduce erosion on exposed soils. Temporary materials are often ones that will rot and/or that will be replaced by natural vegetation. Permanent stabilization is provided by long-lasting, sturdy vegetation, stone or artificial materials designed to withstand the force of moving water. Often, stabilization materials are used in combination with each other, providing both immediate, temporary stabilization and permanent revegetation.

TEMPORARY MATERIALS

Hay or **straw mulch** can help minimize soil movement, and usually lasts one or two seasons, holding the soil until the natural vegetation grows back. Mulch is often used after seeding exposed soil. Hay and straw are not effective in areas of concentrated flows. Be aware that hay mulch typically contains non-native grass seed, while straw does not.

- When mulching exposed soil with hay or straw, use enough mulch to cover the soil completely or nearly completely. A common guide is approximately 90 lbs of mulch per 1,000 square feet (or about 2 square bales for a 30 x 30 foot area). On steep slopes (greater than 4:1 or 25%) or exposed windy sites, it may be necessary to anchor the mulch with staples, netting, or twine.

Hay mulch on a landing.

Brush, slash, and tops from harvesting are often readily available, and are an excellent means of stabilizing exposed soils until the area revegetates naturally. Brush typically does not need to be removed except if it falls below the normal high water mark of waterbodies.

- Use brush on trails that could erode and deliver sediment to streams. Wherever possible, put brush down before the soil becomes disturbed and the soil exposed. The more brush, the better.
- Use brush as a berm on the lower shoulder of roads running across slopes to help stabilize exposed soil and disperse water being shed off the road.
- Use brush on landings or similar high traffic areas (if it will not present a hazard to equipment).
- Use brush at the outfall of road culverts, dips, water bars, and other drainage structures to help hold the soil and disperse concentrated runoff.

Harvesting during frozen winter conditions and putting slash in the skid trails are both excellent ways to limit soil disturbance.

Seeding grasses that will establish themselves quickly can help minimize erosion of exposed soil. Temporary seeding works best on slopes less than 4:1 (25%). The recommended grasses for temporary seeding include winter rye (110 lbs/acre), oats (80 lbs/acre), or annual ryegrass (40 lbs/acre). See "Seeding," page 29, for instructions on how to sow seed.

Temporary erosion control blankets are available in rolls and are made of a wide variety of materials. Usually they are biodegradable. They are often used with grass seed to establish vegetation as the blankets rot. Erosion control blankets must be in contact with the soil to prevent water flowing between the blanket and the soil. On slopes greater than 4:1, blankets may need to be anchored with staples or by other means. Blankets work best in ditch and swale sections (where there is concentrated runoff) when the slopes are gentle.

PERMANENT MATERIALS

Wood chips, waste wood, or bark mulch may last several seasons, depending on the material and its depth. Occasionally, these materials are combined with soil in an erosion control mix. Spread the material to a depth of 2–6 inches, primarily on slopes less than 4:1 (25%). Wood chips, waste wood, and bark mulch are not recommended in areas of concentrated water flow or where they may be subject to wind erosion.

Permanent erosion control blankets are usually made of synthetic materials and are used in high-flow areas such as ditches.

Gravel can provide adequate stabilization, especially on travel surfaces with low slopes and little concentrated flow. Ideally, gravel used in critical areas is screened and/or washed to remove the fines.

Riprap or cobbles are larger stones used to stabilize ditches, heavily traveled areas, and areas of high flow. They are also used to armor steep slopes (up to 1.5:1 or 67%) and culvert inlets and outlets. You can use riprap in combination with erosion control blankets to prevent flowing water from undercutting steep slopes. Use very large stone in combination with smaller cobbles and/or blankets.

Permanent vegetation or revegetation is commonly used to permanently stabilize disturbed areas. Permanent vegetation may include grasses, shrubs, and/or trees. Seeding is recommended on exposed soils within filter areas, at waterbody crossings, and at similar critical sites that are not stabilized by other means. Most other areas will reseed naturally within two years, provided BMPs have been used to control the water flow.

Hay mulch holds exposed soil while grass becomes established.

Wide varieties of seed mixtures for permanent revegetation are available. Usually, they contain combinations of creeping red fescue, annual ryegrass, tall fescue, flatpea, switchgrass, bluestem, deertongue, and other species. Commercially available "Conservation Mix" is often appropriate. A typical mix consists of: creeping red fescue (40%); annual ryegrass (31%); Dutch white clover (20%); birdsfoot trefoil (5%); and hairy vetch (4%). Select a seed mixture based on:

- the site conditions;
- how quickly the soil needs to be stabilized to avoid sedimentation;
- the time of year and predictable weather conditions;
- the soil's moisture and fertility; and
- shade conditions.

Native, non-invasive grass species are preferable if they are available and affordable.

For more detailed and site-specific recommendations, see the USDA Natural Resource Conservation Service's guidelines for Critical Area Planting, Section IV of their Field Office Technical Guide, referenced on the inside back cover.

SEEDING

Whether you are seeding for temporary or permanent vegetation, the sowing process is the same.

Use fertilizer with care near waterbodies, and never put it directly in any waterbody.

- Prepare the seedbed (if necessary) by raking, grading, removing debris, and/or smoothing the exposed topsoil.
- Apply the seed mix immediately after preparing the seedbed, at the supplier's recommended rate (generally from 20–50 pounds per acre) by hand, seed spreader, or hydro-seeder.
- If possible, apply seed in the spring, fall, or after rain to help ensure germination.
- Consider liming and fertilizing the site before seeding, based on soil conditions, or if it is recommended by the seed supplier. Fertilizer-coated seed mixtures may also be available. A few seed types, such as legumes, require inoculants (available from the supplier) in order to become established.
- On critical areas (near waterbodies), dry soils, highly erodible sites, or sites seeded during the summer, mulch the seeded area with hay or straw.
- Do not allow vehicles or heavy foot traffic in areas that have been seeded until the cover is well established.

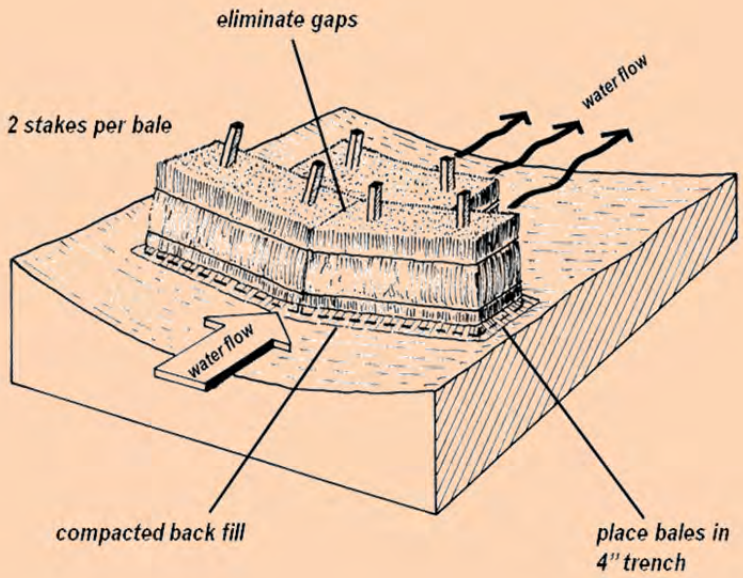
Seeding with grass seed will help stabilize exposed soil, often within a single growing season.

TEMPORARY SEDIMENT BARRIERS

Temporary sediment barriers such as hay bales and filter fences are used to trap sediment during the construction of roads, ditches, and BMPs until other measures, especially permanent vegetation, can be installed. Hay bales and silt fences are not intended as permanent structures and should be removed during closeout or after the site has stabilized.

HAY BALE INSTALLATION

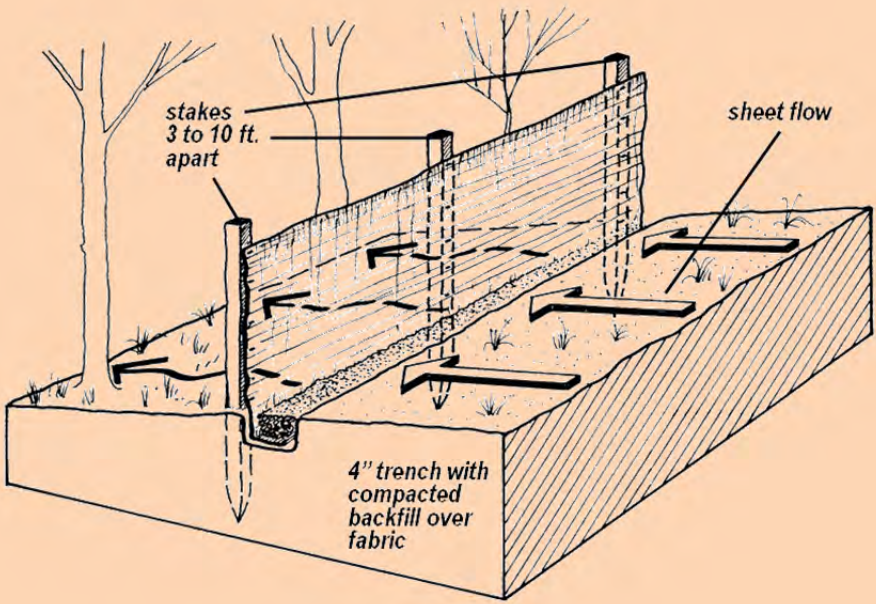
- Excavate a trench 4 inches deep and the width of the bale;
- position the hay bales in a single row or stagger them, making sure there are no gaps between the bales where water could flow through;
- place the bales in the trench and stake with at least two stakes per bale; and
- backfill with soil on the uphill side to keep water from flowing underneath the bale.



FILTER FENCE INSTALLATION

- Install a synthetic filter fence by first setting stakes at least every 3–10 feet. Three feet is needed for light fabric, while 10 feet is adequate when using extra strength fabric and/or a wire mesh support fence.
- Follow the manufacturer's recommendations and choose a filter fabric capable of handling the expected water flow. The fabric may be 15-36 inches high.
- Excavate a 4-inch deep trench upslope, along the line of stakes.
- Place an 8-inch skirt of fabric in the trench; staple the other side of the fabric to the stakes; then backfill and compact the soil.

Hay bales and filter fences are temporary measures. Remember to remove them after the harvest, or when the site has stabilized.



BMPs FOR EVERY STAGE OF THE HARVEST

The remaining sections of this manual cover specific Best Management Practices that are appropriate for a variety of situations or stages of a harvest operation. All are techniques that are intended as steps toward achieving one or more of the Fundamental BMPs listed in the previous section.

The specific BMPs you select in any given situation will depend on a range of factors: the site itself—including terrain, slope, soils, and location in the watershed—as well as the forest stand type, equipment, materials, and experience. The following guidelines are applicable in many situations. However, specific practices may need to be implemented in unique combinations, modified for particular circumstances or incorporate new technology or research in order to meet the objectives of the Fundamental BMPs.

HIGHEST PRIORITIES

- **Minimize damage to the streambed and banks.**
- **Avoid altering the channel or restricting the flow of water.**
- **Maintain fish passage.**
- **Minimize and stabilize exposed soil on crossing approaches.**
- **Control runoff on approaches.**
- **Close out the crossing properly.**

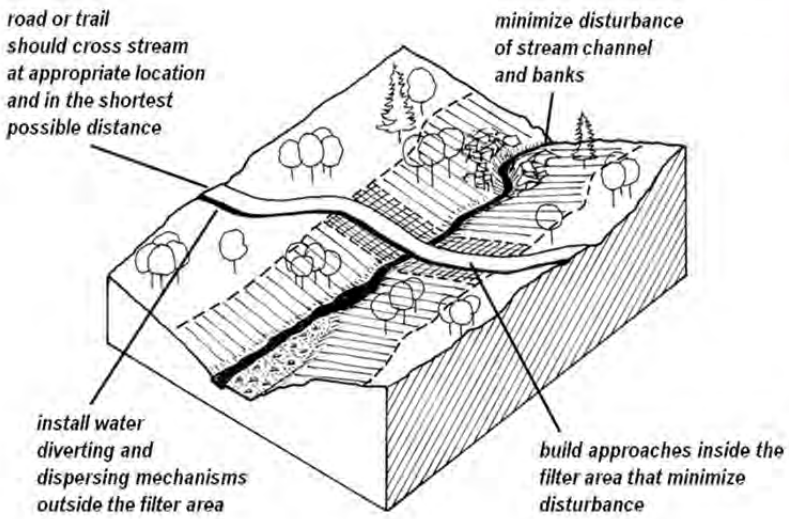
STREAM CROSSINGS

Stream crossings can have a significant negative impact on water quality. However, these impacts can be minimized by making sure your temporary and permanent crossings are properly installed.

Some laws limit the use of "temporary" crossings to a few months, require permits, and/or require certain measures or design features.

Stream crossings encompass the entire section of a road or skid trail as it crosses the filter area on both sides of the stream, including:

- the channel itself;
- the stream banks; and
- the road or trail approaches (at a minimum, a length equal to the recommended width of the filter area at that point).



Stream crossings typically require consideration of several factors.

There are two types of crossings, temporary and permanent:

Temporary crossings are generally in place for up to several months. Stream crossings on trails used by skidders, forwarders, and other yarding and felling equipment are usually temporary.

Permanent stream crossings are intended to be in place for many years. Truck road crossings, for example, are often permanent and require careful design, installation, and long-term periodic maintenance. Permanent crossings are occasionally used for skidding or forwarding, but usually only if there are other access needs for the crossing.

A temporary bridge on a winter skid trail.

A permanent bridge.

PLAN AHEAD

Plan stream crossings before road construction, trail layout, and harvesting begin.

STOP **Crossings on streams with fish may be required to allow fish passage. See page 41 for general fish passage guidelines. Call the Maine Department of Inland Fisheries and Wildlife for help identifying streams with fish habitat at (207) 287-8000.**

BMPs

1. **Determine if a temporary or permanent crossing is needed. Select the type of crossing that best matches the site and stream characteristics, and the need for access.** If you don't need permanent access, properly installed temporary crossings may have less of an impact on water quality.

   Temporary stream crossings include:

   - portable bridges,
   - temporary culverts or pipe arches,
   - logs or pole fords, or
   - brush.

Use temporary structures to keep equipment out of flowing water, to prevent sediment from entering the water, and/or to protect the banks and stream bottom. Portable, removable structures such as bridges, mats, and culverts (when they are installed without additional fill) have the advantage of being reusable.

Temporary culvert crossing of a small intermittent stream using slash.

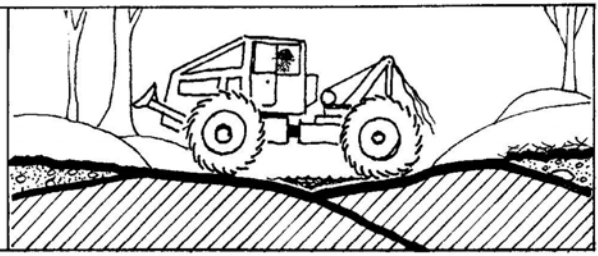
PLAN AHEAD

You may not need to use a structure at a temporary stream crossing if sedimentation can be avoided and the stream bottom and banks will not be disturbed. For example, you can use:

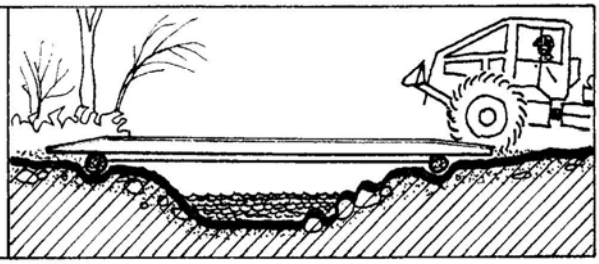
- natural fords—locations where the banks and stream bottom are ledge or rocky; or
- winter crossings when frozen conditions prevent sedimentation and stream channel disturbance.

Types of temporary crossings

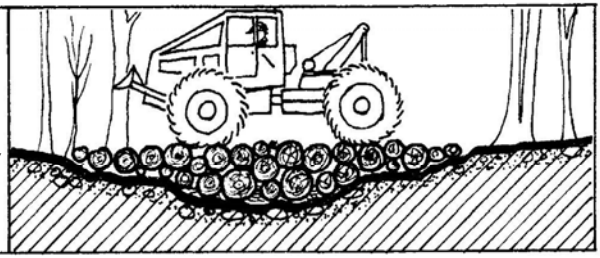
NATURAL FORD
— stream flows over rock or ledge



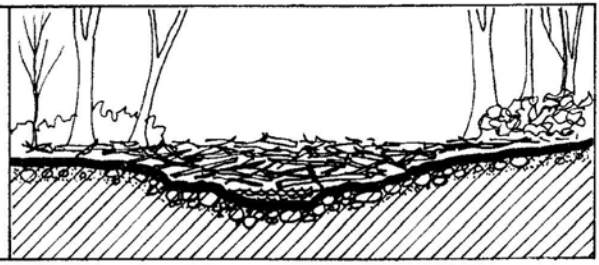
TEMPORARY/ PORTABLE BRIDGE
— protect/stabilize stream bank



LOG OR POLE FORD
— protect bank and channel
— maintain water flow
— remove at closeout



SLASH/BRUSH
— protect bank and channel
— maintain stream flow
— remove at closeout



PLAN AHEAD

Permanent stream crossings are most often used on haul roads, and include:

- bridges,
- culverts,
- pipe arches, or
- stone fords.

Types of permanent crossings

A permanent bridge on a truck road.

An old stone culvert still functioning.

PLAN AHEAD

BMPs

2 Select appropriate crossing locations, based on site and stream conditions.

- Minimize the number of stream crossings needed and maximize the harvest area accessed by each crossing. By locating all of the crossings during the planning stage, you may be able to reduce the number of crossings needed. Decide whether the amount of wood you gain access to justifies a crossing.
- Identify the best available sites for stream crossings. Look for:
  - relatively straight, narrow channels, and stable stream sections;
  - level or gently sloping banks and approaches (on both sides) that are stable;
  - approaches that are more or less at right angles to the channel;
  - hard stream bottom (for crossings where the structure rests on the stream bottom, e.g., pole fords or slash); and
  - areas away from important fish spawning habitat.
- Install crossings when the soil is dry or frozen and the water level is low.
- Minimize impacts to gravel or cobble streambeds where fish may spawn (especially from late fall to spring when you could harm incubating fish eggs).

See the section on "How to Size and Install Bridges and Culverts" on page 47.

PLAN AHEAD

Know what legal requirements, minimum opening sizes, and permits apply for each location and stream crossing type.

BMPs

3. **Select a type of crossing structure that is appropriate for the stream and the adjacent terrain.** Is there a floodplain or wide, flat wetland next to the stream? These are evidence that the stream floods frequently, and you will need to plan the crossing accordingly. Install additional overflow pipes, dips, or other structures to prevent the crossing from washing out at high flows. Also, keep in mind that the type of crossing structure will affect the efficiency of water flow. Culverts may be preferred in narrow, deep gullies or on V-shaped, steep-sided channels. Bridges or box culverts are suited for wider streams with low, flat banks.

4. **Base the opening size on the highest expected stream flows.** Size stream crossings appropriately to reduce the chance that high water levels will undermine or wash out the crossing. Washouts cause erosion and damage the stream. Moreover, repairing or replacing a bridge or culvert is a significant cost, and one that can usually be avoided (see the section on “How to Size and Install Bridges and Culverts,” page 47).

5. **Determine the maintenance and closeout needs, and who will be responsible for these tasks**. A well-built stream crossing is an investment that minimizes your risk of causing sedimentation and can assure long-term access. Protect that investment by knowing in advance how it will be maintained and closed out.

KEY ISSUE

Fish Passage

Stream Smart Crossing

Designing and installing stream crossings that function effectively for road infrastructure while maintaining fish passage is becoming increasingly important. Crossings designed using the **4 "Stream Smart" principles** allow for adequate capacity for high flows, minimize sedimentation of the stream and provide passage for fish and other aquatic life.

Crossings on streams with fish are required by law to allow fish passage. Call the Maine Dept. of Inland Fisheries and Wildlife for help identifying streams with fish habitat at (207) 287-8000.

Principle #1 – Span the Stream Channel

A crossing that is narrower than the natural stream channel can "pinch" the stream, causing water flow to accelerate through the crossing. This can create a barrier to fish movement, as water may move faster than a fish can swim. In addition, when accelerated water flow exits a culvert that is too narrow, it will create a scour hole. This will cause the culvert to become perched above the streambed, which also limits fish passage. Crossings that are at least as wide as the stream channel allow natural flows to be maintained through the crossing, minimizing velocity problems. In *most* cases a crossing sized to be as wide as the stream channel will also accommodate at least a 50 year flood.

A culvert that is spanning the stream channel.

Principle #2 – Set the Crossing at the Correct Elevation

Stream crossings, including closed bottom culverts and footers of open bottom structures, should be set below the elevation of the **ORIGINAL** stream channel. This is particularly important to be aware of when replacing a stream crossing, since old crossings are often set at too high an elevation. A stream crossing that has not been set at the correct elevation limits fish passage and may pond water on the upstream side, which in time may compromise the road.

Water ponded upstream of an old crossing is a good indication that the crossing is set too high.

Principle #3 – Slope Matches the Stream

Crossings should be set at the same gradient as the natural stream channel. This allows the stream to maintain its natural velocity and minimizes problems such as scour holes below the crossing.

Principle #4 – Substrate in the Crossing

Open bottom crossings such as bridges and arch culverts are open to the natural stream bottom. Properly sized and embedded closed bottom culverts can have a stream bottom redevelop in the crossing as stream bed material accumulates. Material may need to be added to culverts, particularly on steeper streams.

A culvert installed to stream smart principles that is accumulating substrate

Tip: The width of the opening for a bridge or culvert should be at least as wide as the stream channel at the normal high water mark. Sizing a crossing only based on the 10 or 25 year flood (see page 48-49) may not always accomplish this goal.

BMPs

1. **Minimize "velocity barriers" by maintaining natural rates of stream flow.** Culverts that constrict flows can increase water speeds beyond the swimming ability of some fish species. Design a culvert's shape, slope, size, and outlet so that the stream's natural rate of flow is preserved and fish can swim upstream through the culvert.

2. **Minimize "low-flow barriers" by maintaining adequate flows in culverts.** Multiple culverts or other designs that spread out flow or broaden the channel may result in water that is too shallow for fish to pass through, especially during summer.

3. **Minimize "exhaustion barriers" to fish.** Culverts that are long, steep, or provide no resting areas may tire fish enough to prevent them from passing through.

4. **Minimize "jump barriers".** Culvert outlets that are set too high ("hanging culverts") can prevent fish from entering the culvert. In addition, outlets that scour the stream channel can create fish barriers over time as the streambed is washed out and lowered.

5. **Minimize "debris barriers".** Woody material that accumulates at the inlet of undersized culverts can sometimes obstruct passage. Adequately sized crossings may allow debris to pass through, but culverts require regular maintenance to prevent obstructions.

6. **Consider possible "behavioral barriers" when choosing the culvert type and material.** The type of culvert bottom may discourage some species of fish from passing over or near them because of specific behavioral traits.

Incorporating these principles into the design of stream crossings can reduce the likelihood of creating barriers to fish. For most stream crossing situations, fish passage can be provided by making sure that:

- structures (bridges and culverts) are at least as wide as the stream channel at normal high water mark;
- culverts are embedded slightly (5-25% of their diameter) in the stream substrate; and
- a natural stream bottom is retained or redevelops within the structure after installation.

Tip: Sediment can collect up stream of undersized stream crossings raising the stream bed elevation. When replacing existing crossings, the new culvert or footings should usually be embedded below the original stream bed elevation. See references (back cover) for more information.

BUILD IT RIGHT

Properly installed water crossings preserve water quality, protect your investment in the crossing, and reduce future maintenance costs.

ALL STREAM CROSSINGS

BMPs

1. **Minimize disturbance to the stream banks, channel, and streambed during installation, use, and removal.**
2. **Minimize and stabilize exposed soils on the approaches within the filter area.** During operations, you can stabilize the approaches with brush or other materials.
3. **Install diversions on the approaches to prevent channeled runoff from entering the stream from the trail or road, and to disperse it into adequate filter areas.**
4. **Build the narrowest roads and trails possible in the filter area and at the crossing.**
5. **Do not obstruct water flow or fish passage in the stream. See the guidelines for fish passage on page 41. Install culverts with the bottom resting on or below the stream bed at the inlet and outlet.**
6. **Minimize work during wet weather or when the soil is saturated.**

TEMPORARY CROSSINGS

BMPs

1. **Stabilize crossing approaches with brush or similar materials, before and during operations.**
2. **Protect the approaches by extending temporary bridges well beyond the stream bank.**
3. **Install any temporary, portable bridges so that all portions of the bridge are above the stream's normal high water mark. Keep abutments back from the banks, if possible.**

A pole ford.

A temporary bridge.

BUILD IT RIGHT

PERMANENT CROSSINGS

BMPs

1. **If possible, build crossings when streams are dry or at low water. If considerable excavation is necessary during periods of regular or high flow, temporarily divert the water while installing the crossings.**

STOP Permanent crossings may require permits, especially if water must be diverted during installation.

2. **Install crossings and approaches using a "no-grub zone" at least the width of the filter area, wherever possible.**
   - Minimize excavation on stream banks and approaches.
   - Construct road approaches using fill (instead of grubbing), leaving the forest floor undisturbed, especially outside the road profile. Consider surfacing with clean gravel or stone. This will stabilize the road surface, prevent it from eroding directly into the stream, and keep mud from being tracked onto the crossing structure.
   - Use geotextile and fill on unstable soils or during wet weather.
   - Set abutments back from the stream's edge.

3. **Design bridges using solid decking or other features to minimize the amount of material that falls through the deck and into the stream.**

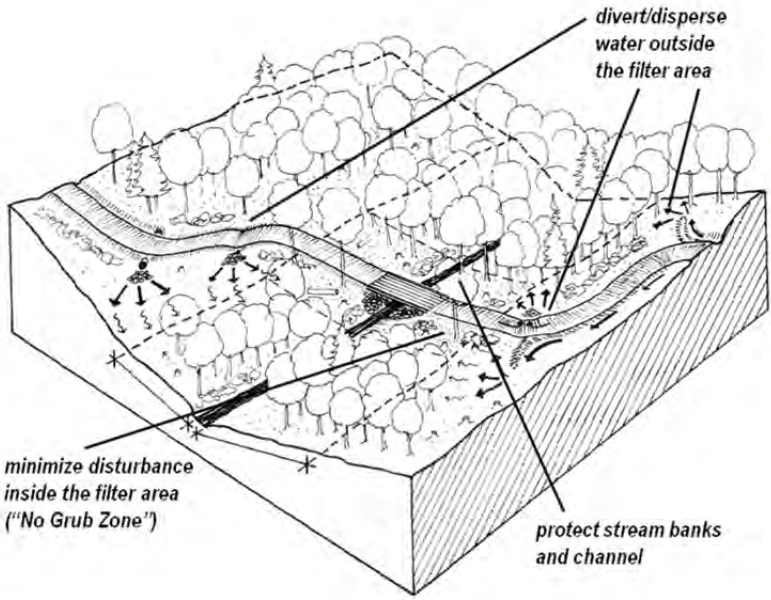
Two types of permanent crossings.

BUILD IT RIGHT

BMPs

4. **Road ditches should not terminate in the stream. Use a broad-based drainage dip or similar structure to divert and disperse water off the road just outside the filter area to the undisturbed forest floor.**

5. **Seed and mulch exposed soil on approaches within the filter area (outside the roadbed). This should be done during or immediately after the road installation, in spring, or in early fall—follow the recommendation of the seed supplier. See p. 29 for more information on seeding.**



A permanent stream crossing that minimizes water quality impacts.

KEY ISSUE: HOW TO SIZE AND INSTALL

Bridges and Culverts

Properly sizing and installing bridges and culverts in stream crossings is very important. Doing so will prevent these structures from failing or washing out, requiring expensive repairs or rebuilding. Moreover, washouts can significantly impact a stream's water quality.

STOP Before designing bridges or culverts, know which legal standards apply and what permits may be required.

Planning a stream crossing involves selecting the best crossing location and type of crossing structure. The size of the bridge or culvert will be based on the opening size needed for the size of the stream you are crossing.

STEP 1:

Determine the degree of flooding the crossing must handle without being damaged or washed out. This will depend on what type of crossing you want and how long you anticipate the crossing to be in place. The longer a crossing is in place, the larger the flood that is likely to occur at any particular location.

Design the crossing opening to handle at least normal high water (a 1–3 year flood) for:

- temporary trail crossings in place during summer, fall, and/or winter seasons (but not during spring runoff).

Design for at least a 10-year flood event for:

- temporary trail crossings that will remain in place during spring runoff;
- temporary road crossings; and
- permanent trail or road crossings that will be regularly maintained.

A 10-YEAR FLOOD EVENT: the highest flood level a stream is likely to reach, on average, in any 10 year period.

Design for at least a 25-year flood event for:

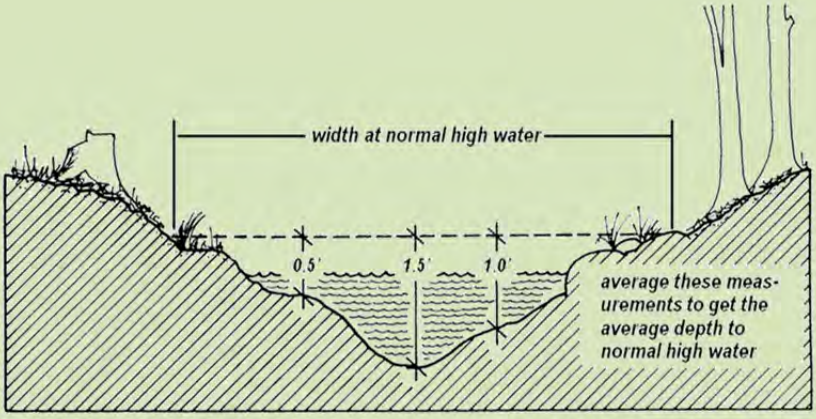
- permanent road crossings that will not be maintained; or
- roads that will be put to bed without removing the crossing.

EXAMPLE: You need to install a crossing that will be temporary, but you won't be able to remove it until after the spring runoff. You are planning to use a round culvert.

SOLUTION: You need to design the crossing for a 10-year flood event.

STEP 2:

Determine the opening size needed to accommodate the expected flood event. The field method described here calculates opening size based on the actual stream dimensions at the crossing location.
Be sure to use streambank evidence to measure at the normal high water mark – not just the existing water level.



- To accommodate **normal high water** (a 1–3 year flood), multiply (width) x (the average depth at normal high water), or keep all temporary bridge components above the normal high water mark.

- For a **10-year flood event**, use Table B1, or multiply (2.5) x (width of the stream at the crossing location at normal high water) x (average depth of the stream at normal high water).

Table B1
10-year Flood Crossing Opening Size (sq. ft.)

Stream Width*	**Average stream depth* (ft.)**			
ft.	**0.5**	**1**	**1.5**	**2**
1	1.25	2.5	3.75	5.0
2	2.5	5.0	7.5	10
3	3.75	7.5	11.3	**15**
4	5.0	10	**15**	**20**
5	6.25	12.5	**18.8**	**25**
6	7.5	**15**	**22.5**	**30**

*** at normal high water mark**
Bold: bridge or arch may be preferred on these larger streams

- For a **25-year flood event**, use Table B2, or multiply (3.5) x (width of the stream at the crossing location at normal high water) x (average depth of the stream at normal high water).

EXAMPLE: The average depth of the stream at your chosen crossing site is (1 ft. + 1.5 ft. + 0.5 ft.) / 3 = 1 ft. You determine the width is 5 feet.

SOLUTION: You use Table B1 because you are designing for a 10-year flood. That table shows that the opening size at the stream crossing should be 12.5 sq. ft.

Table B2
25-year Flood Crossing Opening Size (sq. ft.)

Stream Width*	Average stream depth* (ft.)			
ft.	**0.5**	**1**	**1.5**	**2**
1	1.75	3.5	5.25	7.0
2	3.5	7.0	10.5	**14**
3	5.25	10.5	**15.8**	**21**
4	7.0	**14**	**21**	**28**
5	8.75	**17.5**	**26.3**	**35**
6	10.5	**21**	**31.5**	**42**

*** at normal high water mark**
Bold: bridge or arch may be preferred on these larger streams

STEP 3:

Design the bridge or culvert to meet or exceed the minimum opening size.

- **For bridges or box culverts**, determine a width and height that, multiplied together, produce a result that is at least as great as the square footage you determined you needed in Step 2. Bridges should be installed above the normal high water mark or higher.

- **For round culverts**, select a culvert size using Table C.
  - Find the opening size in the first column that is equal to, or the next size up from the opening size you determined in Step 2.
  - Find the culvert diameter for that opening size in the second column.
  - If you plan to use more than one culvert, be sure the total opening size of all culverts adds up to the minimum opening size you determined in Step 2.

Table C
Culvert Diameter And Opening Sizes

Opening size (sq. ft.)	Diameter (inches)
0.20	6
0.80	12
1.25	15
1.75	18
2.40	21
3.15	24
4.90	30
7.05	36
9.60	42
12.55	48
15.90	54
19.65	60
23.75	66
28.26	72

Tip: To provide adequate fish passage the width of the opening for a bridge or culvert should be at least as wide as the stream channel at the normal high water mark (see page 41). Sizing a crossing only based on the 10 or 25 year flood may not always accomplish this goal.

- **For pipe arches**
  - calculate the required opening size as in Step 2;
  - double the opening size; and
  - use Table C to find the pipe arch diameter for that opening size. (The opening of pipe arches is approximately half that of round culverts of the same diameter). Make sure the diameter is wide enough to install bottomless/half circle arch footings above the normal high water mark.

EXAMPLE: You plan to install a round culvert, so you look for your required opening size of 12.5 sq. ft. in the left column of Table C.

SOLUTION: 12.5 isn't listed, but the next highest number is 12.55. The diameter size listed opposite 12.55 in the right column is 48 inches. This is the size culvert you need.

STEP 4:

Adjust the bridge or culvert size as necessary to:

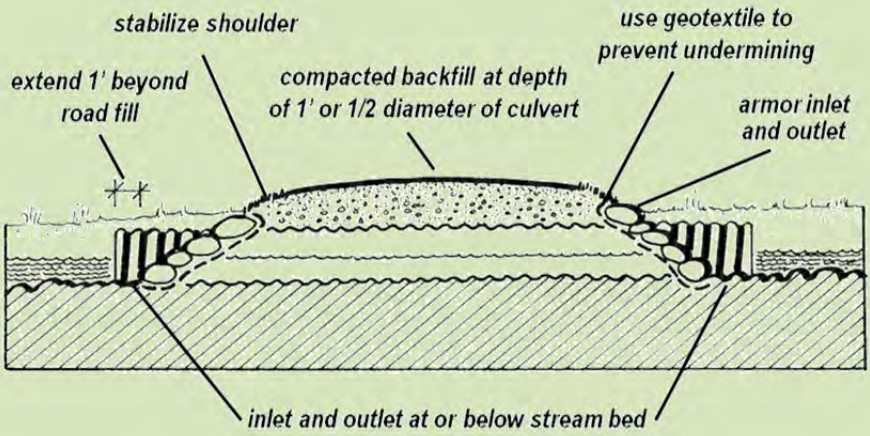
- minimize disturbance to the stream channel and banks;
- allow for unrestricted normal flows; and
- allow fish to pass when water is present.

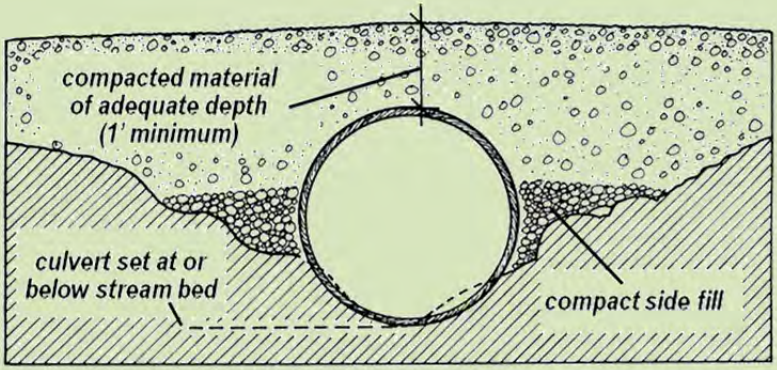
EXAMPLE: This stream has fish in it, and fish passage is required by law. To provide adequate fish passage, the culvert must span the stream.

SOLUTION: The stream was measured at 5 ft. in width. Therefore, a 60 inch culvert would be adequate to provide fish passage.

When installing permanent culverts:

- Set the culverts with the bottoms slightly below the bed of the stream, and at a 2-3% slope. Avoid "hanging" culverts where the bottom of the culvert outlet is above the low water level.
- Extend the culvert inlet and outlet 1 foot or more beyond the fill or roadbed.
- Cover with compacted backfill to a depth equal to half the culvert diameter, or at least 1 foot deep.
- Stabilize the inlet and outlet of culverts and bridges using cobbles, timber abutments, or other armoring.





AS AN ALTERNATIVE to this field method, consider using a hydrological analysis model and/or assistance from a professional engineer, especially for permanent crossings. See the "References" section for more information.

MAINTAIN IT

ON ALL CROSSINGS

BMPs

1. **Do not allow ditches to terminate directly into the stream or the filter area.** Runoff should be dispersed onto the undisturbed forest floor before it reaches the filter area.
2. **Make sure the approaches within the filter area are stabilized**
3. (see “Stabilizing Exposed Soil” on page 25).
4. **When grading or rock-raking approaches, do not drag material onto the crossing.**

TEMPORARY CROSSINGS

BMPs

1. **Stabilize the soil on stream crossing approaches in the filter area by using slash, brush, or log corduroy.**
2. **If there is rutting or channeling on the crossing approaches, disperse the water flow to an undisturbed, stable filter area using water bars or similar structures.**

PERMANENT CROSSINGS

BMPs

1. **Establish a regular monitoring and maintenance schedule for permanent stream crossings.**
2. **Make sure the crossing approaches are not carrying sediment to the stream.** Maintain and restabilize them as needed.
3. **See if the abutments, armoring, and bank stabilization measures are being undermined or damaged, and replace or repair them as necessary.** Severe undermining may indicate a poor location for the crossing, improper sizing, or incorrect installation, and can only be corrected by relocating or redesigning the crossing.
4. **Periodically remove debris and other materials that may block or constrict the culvert or bridge opening.** Using 15"–18" minimum diameter culverts greatly reduces the need for this maintenance work.

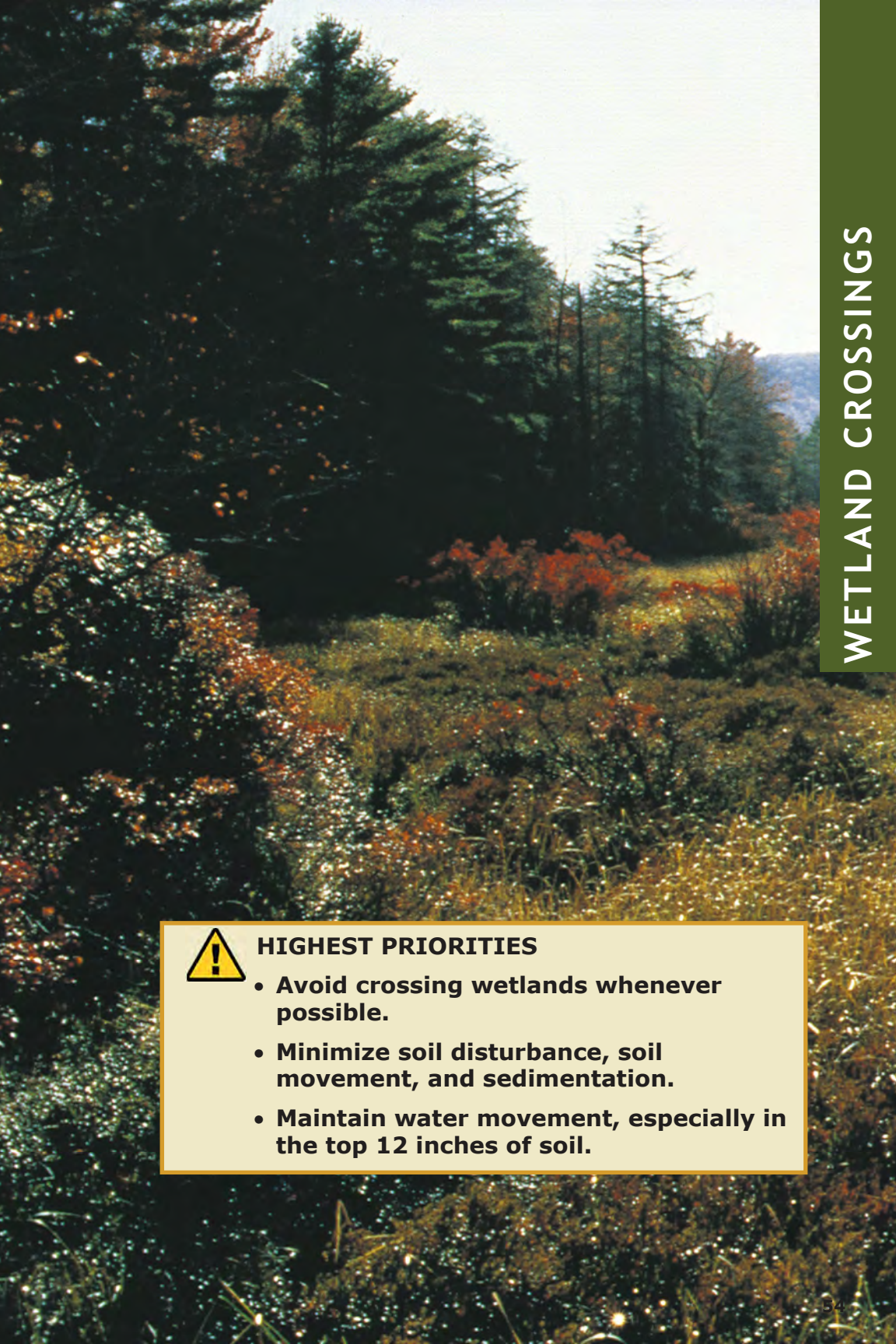
CLOSE IT OUT CORRECTLY

Closeout BMPs will help minimize future damage at both permanent and temporary crossing sites.

BMPs

1. **As a first step, identify the long-term monitoring and maintenance needs appropriate to the harvest site and communicate these to the landowner, forester, and logger.** Determine who will be responsible for these tasks.
2. **Remove temporary structures, slash, and/or other materials from below the normal high water mark when the crossing is no longer used.** Do not remove debris that has fallen into the stream naturally.
3. **Leave brush in place on the approaches and banks (above the normal high water mark) to ensure ongoing stabilization when you closeout.**
4. **Remove bed logs used for temporary bridges unless doing so may cause more disturbance.**
5. **After the harvest, stabilize the remaining exposed soil on the approaches in the filter area.** Use additional brush, hay, or other materials. If large areas are disturbed, spread grass seed and mulch.

Closeout of a temporary stream crossing.



HIGHEST PRIORITIES

- **Avoid crossing wetlands whenever possible.**
- **Minimize soil disturbance, soil movement, and sedimentation.**
- **Maintain water movement, especially in the top 12 inches of soil.**

WETLAND CROSSINGS

Wetlands are areas where soils are saturated or flooded for a significant part of the year, where water-loving plants are found, and where soils have taken on special characteristics (see page 9 for more discussion and examples of wetlands). The large amount of water and organic matter in wetland soils make them difficult to work in. Wetland soils have low weight-bearing capacity and therefore are weaker than upland soils. In addition, it is common for water to be moving through the soil near the surface.

BMPs in wetlands help minimize two primary impacts: sedimentation and the alteration of water flow through the wetland soils. Sedimentation is primarily a concern for non-forested wetlands. Sedimentation in forested wetlands is somewhat less of an issue when there are no other waterbodies flowing through them. Several wetland BMPs provide ways to increase the strength, or bearing capacity, of the soil (minimizing rutting) and to maintain water movement through the wetland soil.

PLAN AHEAD

BMPs

1. **Construct permanent wetland crossings only if there is no reasonable alternative.** Can the wetland crossing be avoided by rerouting the road or trail?
2. **Get assistance from a professional engineer or licensed forester if you need to construct permanent roads in non-forested wetlands.** These professionals can minimize your costs as well as the impacts on water quality.
3. **Avoid building winter crossings in areas with moving water that does not freeze well.**
4. **Design wetland crossings that will remain stable and will not restrict water flow during wet periods, especially at spring high water.**
5. **Determine the maintenance and closeout needs, and who will be responsible for these tasks.**

BUILD IT RIGHT

BMPs

1. **Minimize the length and width of the road or trail within the wetland.**

2. **Temporary crossings are preferred.** Use wooden mats, log corduroy, or similar structures to cross wetlands.

3. **Stabilize the approaches to non-forested wetland crossings, and the road and trail surfaces within the wetland itself.** The approaches should be stabilized out to the edge of the filter area. Filter areas around non-forested wetlands begin at the border between non-forested and forested areas (to the degree that it can be identified). See page 25 for more information on soil stabilization.

4. **Filter areas within forested wetlands need to be stabilized too.** In these cases, the filter area is based on the location of streams that flow through the wetlands.

STOP Soil disturbance, fill, and other alterations in wetlands (both forested and non-forested) may require permits from one or more government agencies. Call the Maine Forest Service first at (800) 367-0223 (in state only), or (207) 287-2791. They can refer you to the appropriate agencies.

Wetland culverts allow for cross drainage if the road fill does not.

BUILD IT RIGHT

TEMPORARY CROSSINGS

BMPs

1. **Cross wetlands on frozen ground if possible.**
2. **Use brush, if necessary, to increase the soil's bearing capacity.**
3. **Avoid rutting as much as possible.**

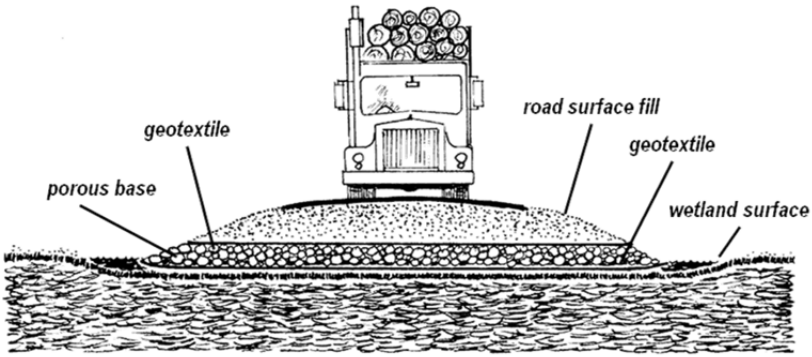
Log corduroy used for a skid trail across a wet area.

BUILD IT RIGHT

PERMANENT CROSSINGS

BMPs

1. **Use road base materials such as waste wood, poles, corduroy, or large stone that permit water to flow through the road's sub-base.** If necessary, use these materials in combination with geotextiles to keep the different layers of road material separate or to isolate the wet soils. This will increase the bearing capacity of the road so it can stand up to heavier loads and traffic.



Use geotextile to keep fill from mixing with the wetland soil

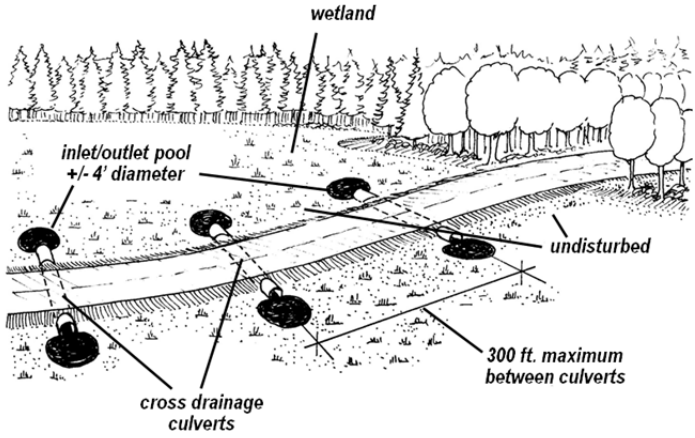
BMPs

2. **Limit excavation and other disturbances to the organic mat and the soil. If you can maintain the natural water flow without ditching, do so.**

BUILD IT RIGHT

BMPs

3. If the drainage through the road base is not adequate (if the road is damming water), install cross-draining culverts or other structures to allow water to flow through.



BMPs

4. Use side ditches, parallel to the road, only when they are needed to collect flowing surface and subsurface water. Disperse the water to undisturbed areas.

MAINTAIN IT

BMPs

1. Use temporary crossings when the ground is frozen. Pack or plow the snow to help freeze the ground.

2. Keep cross drainage structures functioning by clearing debris that can plug them.

3. Whenever possible, use equipment with wide tires, tracks, or other features that distribute the weight.

CLOSE IT OUT CORRECTLY

BMPs

1. Identify the long-term monitoring and maintenance needs appropriate to the harvest site and communicate these to the landowner, forester, and logger.

2. After harvesting, remove wooden mats, log corduroy, or similar temporary structures used to cross non-forested wetlands.

HIGHEST PRIORITIES

- **Construct new roads outside of filter areas, except at stream and wetland crossings.**
- **Where you must cross filter areas or wetlands, minimize the length of road.**
- **Keep water off the road with drainage systems that are well designed and maintained.**
- **Divert and disperse runoff onto undisturbed forest floor outside filter areas.**

TRUCK ROADS

This section contains BMPs for roads used primarily for hauling wood from the landing by truck. The design, materials, specifications, and use of these roads vary widely, but they are all referred to as "truck roads" in this section, whether it is a short 100-foot spur, or an extensive road system.

BMPs for truck roads are critical for protecting water quality in and around filter areas, and for minimizing runoff.

The construction and use of truck roads can sometimes cause significant water quality problems. Road construction may alter the flow of water over and through the ground. Truck roads expose soil over a large area and get heavy use. They often require permanent stream crossings. All of these factors pose risks to the quality of nearby waterbodies. However, most negative impacts on water quality can be avoided if truck roads are designed, constructed, and maintained properly.

Well-planned and well-built roads make sense both economically, and environmentally. Road BMPs:

- extend the seasons the road can be used;
- reduce road wear and maintenance costs;
- enable trucks to haul heavier loads;
- lower truck maintenance costs;
- reduce travel time; and
- protect water quality during and after harvests.

PLAN AHEAD

ALL TRUCK ROADS

BMPs

1. **Determine the size and type of road needed.** Plan roads that are appropriate to the immediate harvest needs and the long-term forest management objectives. Consider the harvest characteristics (the volume and types of products, terrain and soils), all current uses of the road, and other features of the property (the shape of the lot, proximity to neighboring lots, and long-term management plans).

2. **Identify the future forest management uses of the road, after the current operation is closed out.** Is the road likely to be used for precommercial operations like pruning? Is access for fire suppression important? How often will the road be used for harvesting?

3. **Determine the maintenance and closeout needs, and who will be responsible for these tasks.**

4. **Know the legal requirements for roads.** Are local or state permits required?

NEW ROADS

BMPs

1. **Plan and design new roads that will meet your harvest needs.**
   - What size truck will be used?
   - During what season will you be cutting, and how long will the harvest last?
   - What are the safety considerations?
   - What are the long-term road uses:
     - permanent or temporary access?
     - recreation or other road uses?
     - future harvests?

2. **Think about how you want the road to fit into the access system for the entire property. Elements to consider are:**
   - the direction of travel;
   - turnarounds;
   - entrances;
   - total road length; and
   - connections to other roads.

PLAN AHEAD

OLD ROADS

BMPs

1. **Determine if old roads can be reused or upgraded with minimal impacts to water quality.** Consider the road's location, the existing drainage (i.e., where does the water flow?), the potential for additional drainage, and intended uses.

2. **Consider relocating roads that:**
   - encroach on a filter area unnecessarily;
   - have poorly placed or unnecessary stream crossings;
   - have poor drainage; and/or
   - have unstable soils that cannot be improved (especially gullied roads, roads in ravines, or roads that collect and hold water).

In some situations, there may be laws that govern when, where, and how old roads can be upgraded. Contact the Maine Forest Service, the Maine Department of Environmental Protection, the Land Use Planning Commission, and/or the town Code Enforcement Officer for more information.

PLAN AHEAD

LOCATING AND LAYING OUT NEW ROADS

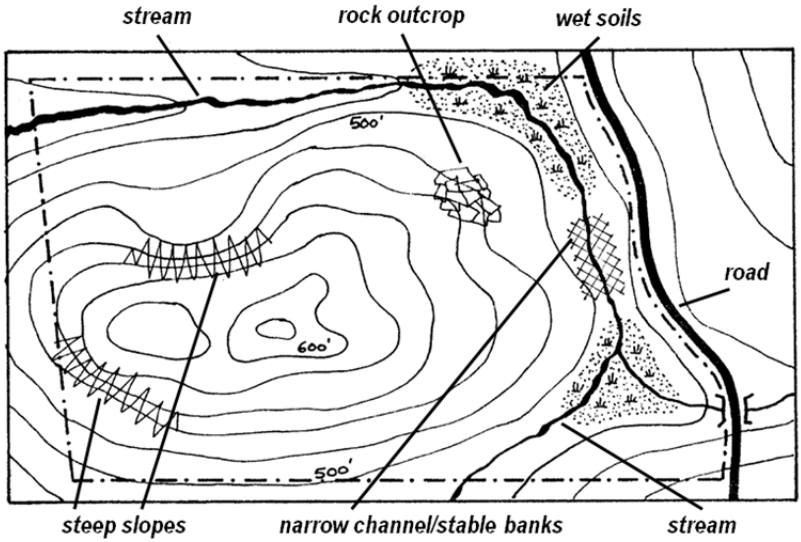
Lay out new roads so that they fit the terrain, ground conditions, and equipment you will be using. It is often helpful to use topographic maps and aerial photos for this.

These recommendations are not intended to substitute for obtaining engineering advice or abiding by regulations in the appropriate circumstances.

BMPs

1 **Identify important features on maps, aerial photos, and in the field.** Be sure to include:

- the boundaries of the property and the area to be harvested;
- water bodies and filter areas;
- ephemeral, wet, or poorly drained areas next to water bodies;
- existing roads, entrances, landings;
- stands; and
- terrain features such as steep slopes, flat benches, rock outcrops, gullies, bowls, and ridges.



Map out important features on the ground first...

PLAN AHEAD

BMPs

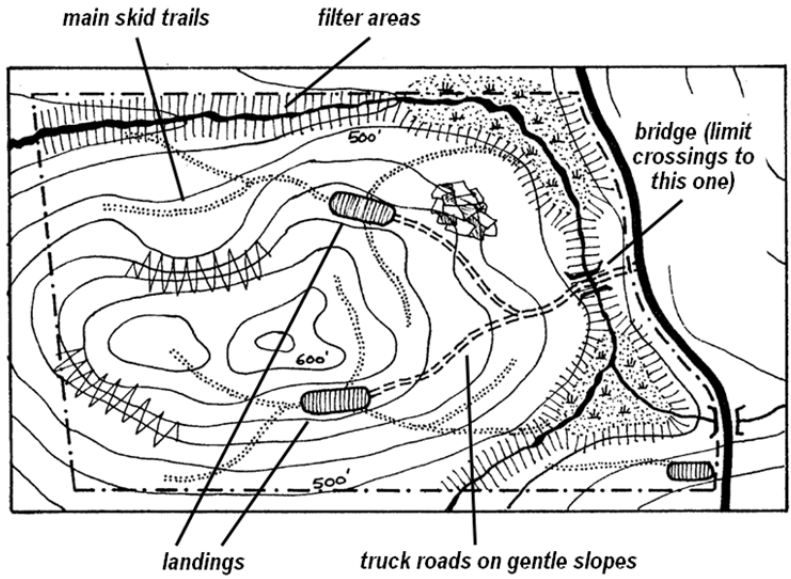
2. **Mark the harvest boundaries, water bodies, new road locations, stream crossings, and filter areas on-site.**

3. **Lay out roads where there are better-drained soils, gentle slopes (ideally 2–5%), and good stream crossing locations.**

4. **Minimize the overall road length, while still meeting operational objectives, including preferred log landing locations.**

5. **Minimize road sections where water may be difficult to drain or divert.** Pay special attention to:
   - road grades greater than 10% (over 15% in mountainous terrain);
   - long, unbroken grades;
   - long, flat stretches; and
   - roads laid out straight uphill or downhill that still require ditches.

6. **Avoid filter areas (except at appropriate stream crossing locations); ephemeral, wet, or poorly drained areas; floodplains; and steep slopes, outcrops, gullies, or ravines.**



...then lay out the roads, trails, etc.

BUILD IT RIGHT

BMPs protect water quality when building new roads or upgrading old ones. Using BMPs protects the condition of, and investment in, the road.

TIMING

BMPs

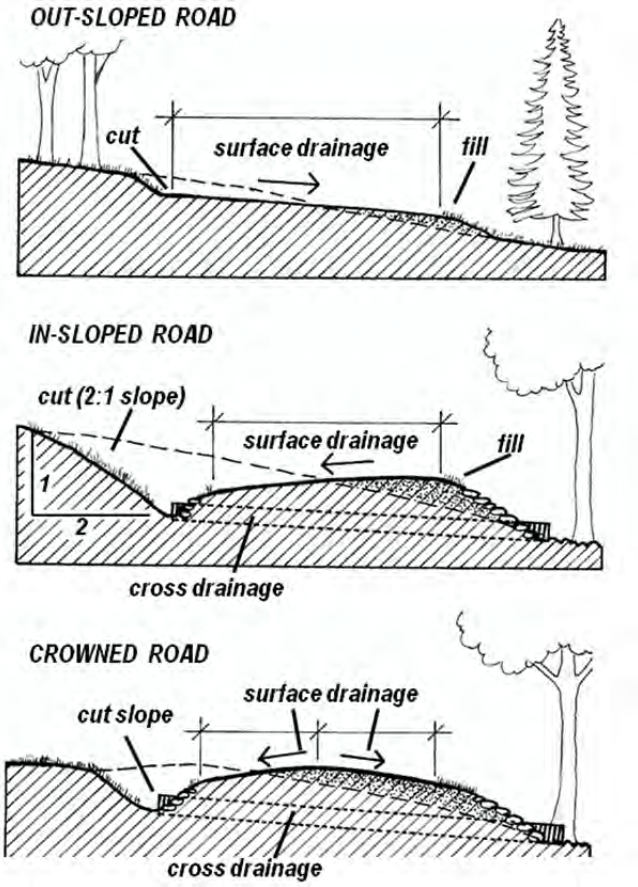
1. **Whenever possible, construct roads during dry periods or when the ground is frozen.**
2. **Minimize work during heavy rains and/or wet periods.**
3. **Plan how and when roads built during the winter will be stabilized.**
4. **If possible, build roads before you intend to use them heavily so that they have time to settle and stabilize.**

CONSTRUCTION

BMPs

1. **Shape roads to move water off the road surface using a crown, an out-slope** (this may present a safety hazard in icy conditions or on curves), **or an in-slope** (this will often require ditches and cross-drainage structures).
2. **Use gravel, crushed stone, or other surface material** (with or without geotextile) **to stabilize roads, shed water, and increase the weight-bearing capacity.**
3. **Maintain cut and fill slopes at a natural angle of repose or less** (2:1 for average soils) **wherever possible.**

BUILD IT RIGHT



BMPs

4. **As the construction progresses, stabilize areas of exposed soil that will receive road runoff such as cut-and-fill slopes, steep road shoulders, and erosion-prone soils in filter areas.**

5. **Use temporary sediment barriers to slow flowing water and trap sediment during construction.**

KEY ISSUE

Controlling the Water

DRAINAGE AND DIVERSION STRUCTURES

Water diversions minimize the amount of run-off that reaches waterbodies. These diversions can include cross-drainage structures, ditches, turnouts, and other structures that divert water away from the road and disperse it into areas of undisturbed forest floor.

BMPs

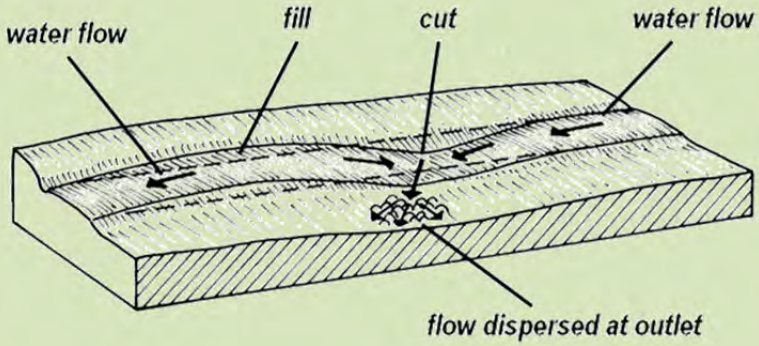
1 **Construct roadside ditches to carry runoff from the road surface and uphill areas. Ditches with a flattened U-shape (a broad, rounded bottom and sloping sides) are preferred—avoid straight-sided ditches.**

Grass and stone stabilized ditch

U-shaped, grass stabilized ditch

BMPs

2 **Divert water off the road surface and away from the road using natural dips (or grade breaks), broad-based dips, culverts, turnouts, or similar techniques.**



BMPs

3 **Space water diversions close enough together to control the volume and speed of water.** The recommended spacing varies widely, depending on the grade (steeper grades require closer spacing). Refer to Table D for the spacing most appropriate for the slope at hand. Choosing appropriate locations for the diversions may be more important than spacing on some sites.

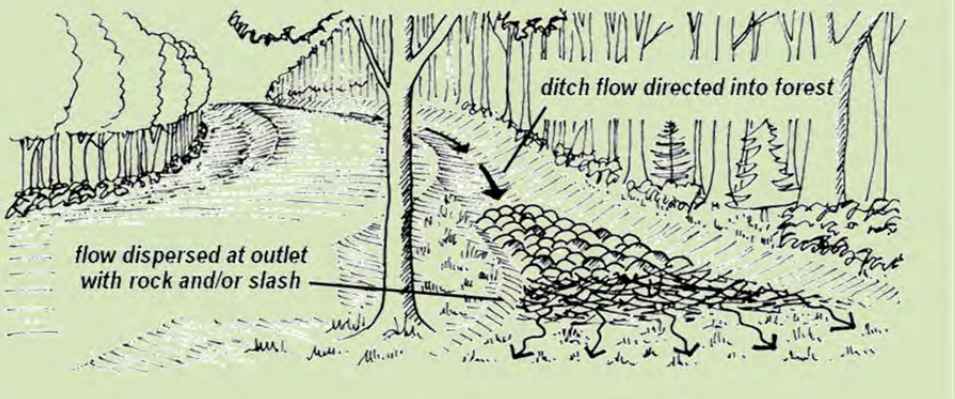
Table D
Spacing for Water Diversion

Road Grade (%)	Spacing (ft.)
0-2	250-500
3-5	165-250
6-10	140-165
11-15	125-140
16-20	100-125
21+	<100

4 **The location and spacing of culverts is often more important than their diameter. For round culverts, use at least a 15- to 18-inch diameter size to minimize plugging and maintenance.**

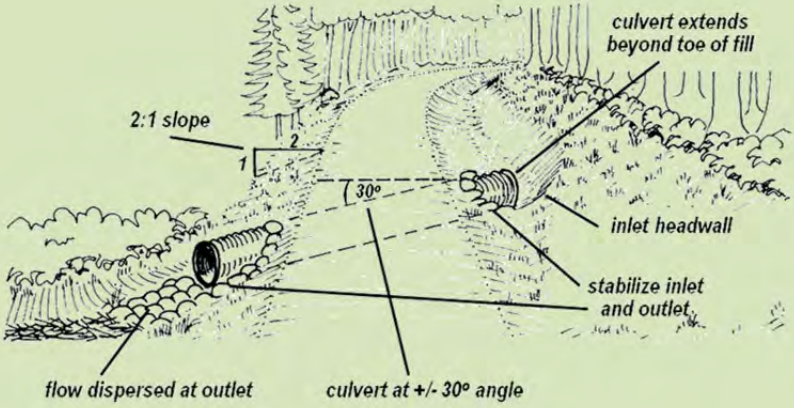
5 **Disperse water flowing from the outlets of diversion structures or from downhill road shoulders using brush berms, riprap aprons, or other methods—before it enters the filter area.**

6 **Construct settling basins outside the filter area if water from ditches cannot be diverted off the road onto undisturbed forest floor.** Settling basins will require periodic maintenance and cleaning.



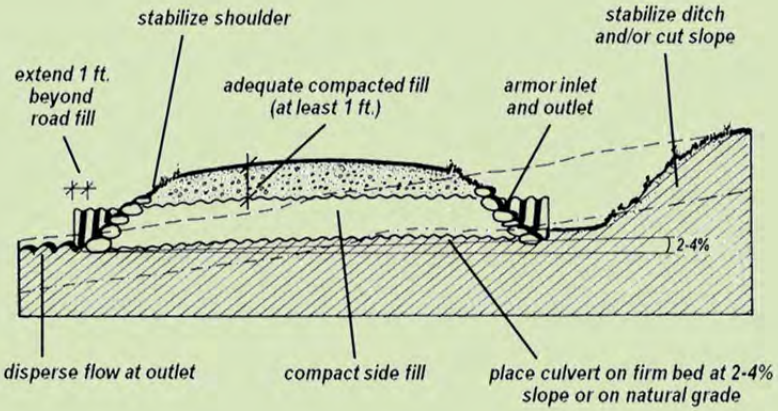
CROSS-DRAINAGE CULVERTS

Cross-drainage culverts may be metal, plastic, concrete, or wood (box culverts). Permanent or temporary culverts are most effective when installed according to the following specifications.



BMPs

1 **Install a berm or diversion headwall that directs ditch water into the culvert and protects the culvert end.** Ideally, the berm is left in place during the excavation of the ditch.



BMPs

2. **Install culverts at a 2–4% slope and at a 30° angle to** the road.

3. **Stabilize areas around the inlet and outlet with riprap or other material, and extend the culvert at least 1 foot from the road fill on either end.**

4. **Install culverts on top of adequate bedding material (native soil or, if necessary, added fill) that is free of branches or large rocks.**

5. **Cover the culvert with compacted material to a depth of half the culvert diameter (or a minimum of 1 foot) or to the manufacturer's recommended specifications.**

MAINTAIN IT

Proper road maintenance protects water quality and the road by keeping the BMPs functioning. If these structures fail, significant water pollution can result, most often during severe rainfall or snowmelt. Many of the structures used to divert water from road and trail surfaces should be maintained both during and after the harvest (unless the road is closed out). Periodically removing accumulated sediment in these structures will keep them operating as they were designed to.

BMPs

1. **Avoid using roads during wet seasons or after heavy rains.** Let wet roads dry out or freeze before reusing them.
2. **Regrade the road surface if the crown is lost from heavy use.** This prevents water from running in the wheel ruts. Don't leave material at the road's edge. Such "false ditches" can carry water along the road edge, bypass the BMPs, and channel the water into filter areas or crossings.
3. **Inspect ditches to make sure they have not begun to fill in, slump, or develop channels. Clear blocked ditches.**
4. **Reshape and/or stabilize ditches as needed with erosion control mats, or by other methods.**
5. **Stabilize exposed soils within filter areas and areas that drain directly to waterbodies. Where your original stabilization techniques are no longer effective, restabilize using additional materials (mulch, brush, and/or seeding) or other techniques.**
6. **Keep cross-drainage culverts free of debris and accumulated sediment at their inlet and outlet. Repair the outfall protection if water is eroding the soil around it.**
7. **Maintain the riprap or other armoring at culvert ends to prevent erosion around the pipe and to protect the ends from physical damage.**
8. **Replace culverts that have been undermined or crushed, before they fail.**
9. **Clean out settling basins, ponds, and check dams well before they fill up with sediment.**

CLOSE IT OUT CORRECTLY

Most erosion and sedimentation from roads happens within two years of the operation. Road closeout BMPs are best used before leaving the site for any extended period, or after the harvest is completed—even if you expect to use the road again. These BMPs prevent damage, ensuring that the road can be used again in the future. Of course, they also prevent water pollution.

BMPs

1. **As a first step, identify the long-term monitoring and maintenance needs appropriate to the harvest site, communicate these to the landowner, forester, and logger, and decide who will be responsible for each task.**

STOP If you are planning to close access roads permanently, notify the Maine Forest Service at (800) 367-0223 (instate) or (207) 287-2791.

2. **Close out road sections as portions of the harvest are completed.**
3. **Make sure drainage structures are functioning correctly, are free of debris and accumulated sediment at their inlet and outlet, and are adequately sized for storm events.**
4. **Stabilize and seed exposed soils outside the travel surface, within filter areas, and in areas that drain to waterbodies.**
5. **Reshape and stabilize the road surface and ditches as needed.**
6. **Remove temporary sediment barriers such as hay bales and filter fences.**
7. **Divert water entering the road from skid trails, log landings, or other roads.**
8. **If necessary, limit or block vehicle access to prevent damage or rutting** (if this is compatible with the landowner's objectives)**.**

Revegetated road ditches carry water without eroding.

HIGHEST PRIORITIES

- **Locate landings on sites with well-drained soils and gentle slopes whenever possible.**
- **Avoid locating landings in or near waterbodies (including wetlands) and filter areas.**
- **Minimize the amount of water entering the landing from roads or skid trails.**
- **Stabilize and maintain the landing surface.**

LOG LANDINGS

Log landings are the cleared areas in the harvest area where logs and other products are brought from the woods and piled, sorted, or stored before being loaded onto trucks. Log landings are sometimes referred to as log yards or decks. Landings are also where hazardous materials often are stored or used to maintain and repair equipment and roads. Please refer to the "Hazardous Materials" section on page 90 for BMPs that deal with these substances.

BMPs will help prevent negative impacts to water quality and can extend the use of log landings during—and long after—the harvest. Landings are often the most visible part of the operation. BMPs may help maintain or improve the landing's appearance while demonstrating conscientious work to the public.

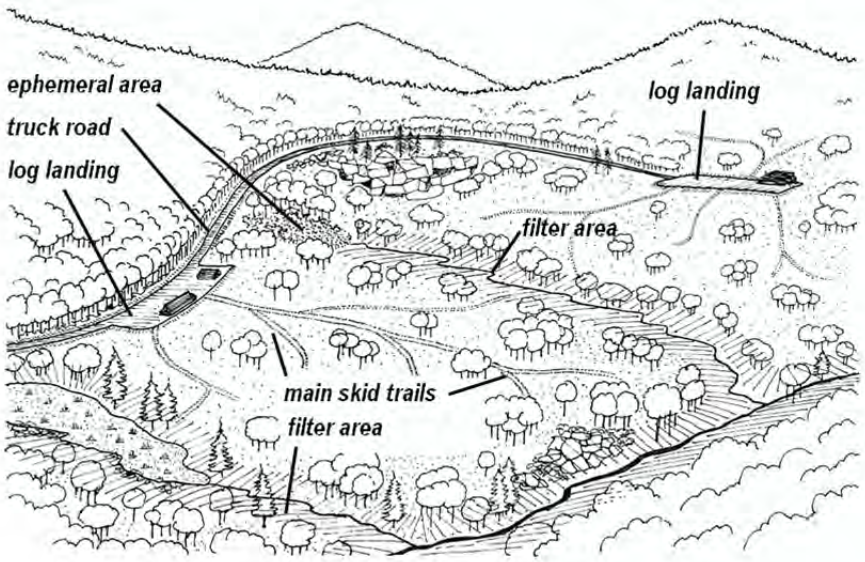
PLAN AHEAD

Log landings are busy places where a relatively large amount of soil may be exposed or disturbed. It is therefore important to locate landings away from water and maintain erosion controls.

PLAN AHEAD

BMPs

1. **Use maps and field information to decide the best location for log landings.** Preferred sites are:
   - on well-drained soils;
   - on gently sloping (not flat) ground; and
   - outside filter areas.
2. **Keep the landing as small as possible and still meet the requirements of the equipment, the quantity and type of products, and safety.**
3. **Mark the landing boundaries before construction begins.**
4. **Lay out skid trails and roads so that water cannot flow into or out of the landing where they enter.**
5. **Plan how you will stabilize exposed soil on the landing after the job.**
6. **If landings already exist, determine if they can be reused with adequate erosion controls. If not, relocate them.**



Select landing locations carefully.

BUILD IT RIGHT

BMPs

1. **Minimize the area of the landing that is stumped or grubbed.** Logs may sometimes be piled on relatively undisturbed soil or forest floor, within reach of loading equipment.

2. **Install drainage ditches, water bars, or berms to drain the landing to areas of undisturbed forest floor, or to road drainage systems that can handle the amount of water coming off the landing.**

3. **Surface the landing with wood chips, stone, or aggregate if it will help stabilize the surface and shed water.** Use these materials on top of geotextiles, if necessary.

4. **During construction, install temporary sediment barriers (such as hay bales or silt fences) to keep newly exposed soil from entering flowing water and filter areas.** See page 30 for more information on temporary sediment barriers.

Slash and logging debris can help stabilize exposed soil on log landings.

MAINTAIN IT

BMPs

1. **Maintain the landing surface to keep water from collecting or channeling.**
2. **Maintain drainage structures on roads and trails to keep water from entering the landing.**
3. **Install temporary or short-term measures (e.g., water bars) on skid trails if significant rain is likely during operations.**
4. **Allow landings to dry out after significant rainfall.**

A well-maintained, well-drained landing.

CLOSE IT OUT CORRECTLY

BMPs

1. **As a first step, identify the long-term monitoring and maintenance needs, decide who is responsible for these tasks, and make sure everyone involved in the operation is notified.**

2. **Prevent water from entering or exiting the landing via roads or skid trails.** If necessary, install water bars or similar diversions to divert flowing water to the undisturbed forest floor.

3. **Seed, mulch, or otherwise stabilize the landing to establish a vegetative cover.** This is particularly important near waterbodies and filter areas. If the soils in the landing are severely compacted, some site preparation may be necessary before vegetation can take root.

4. **Limit vehicle access to the landing** (if this is compatible with the landowner's objectives)**.**

5. **Remove any temporary erosion control structures such as staked hay bales or silt fences. Make sure that permanent measures are in place.**

Seeded and mulched landing area.

HIGHEST PRIORITIES

- **Minimize water channeling in trails and entering filter areas.**
- **Limit the amount of exposed soil.**
- **Leave enough vegetation to provide important natural functions within filter areas.**
- **Close out trails appropriately.**

TRAILS AND HARVESTING

Much of the activity on a harvest operation happens on logging trails, away from truck roads and log landings. Trails may be cut for skidders, forwarders, felling machinery, and other equipment. Logging trails often require little or no excavation, and are usually temporary.

PLAN AHEAD

WORKING IN FILTER AREAS

Clearing trails and cutting trees, by themselves, may have a limited or temporary impact on water quality. However, when trails and trees are cut within a filter area, the potential for negative impacts on water quality increases.

BMPs

1. **Determine how much and where to cut within the filter area first; then plan your trail layout.** Limiting the harvest activity within the filter area is an important practice for protecting water quality during harvesting.

2. **Delineate filter areas in the field that are of appropriate width around waterbodies** (including non-forested wetlands)**.** The size of the filter area should be based on site and stand conditions, but at least the width shown in Table A on page 23.

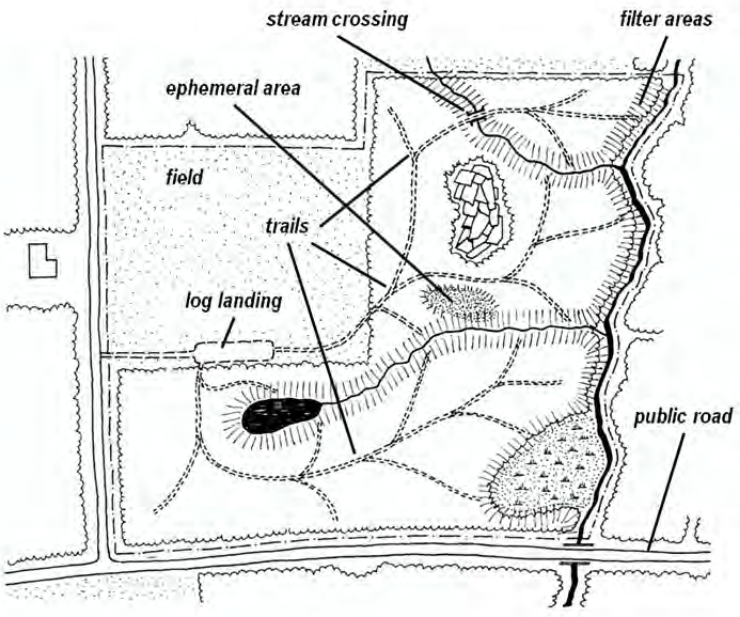
PLAN AHEAD

TRAIL LAYOUT

Locating and laying out skidding or forwarding trails in advance, especially main trails, can prevent problems. Consider the terrain, where the wood is, the lean of the timber, available equipment, the grade, soil conditions, skidding distance, filter areas along streams, and stream crossings. Good planning may reduce the skidding costs, and can reduce or eliminate the need for additional BMPs and structures.

BMPs

1. **If possible, lay out trails for winter harvests in advance when there is no snow on the ground. Ideally, lay out trails on bare ground during wet seasons.**
2. **Whenever possible, lay out main trails to avoid waterbodies and their associated filter areas, wet spots, seeps, and the bases of slopes.**
3. **Keep trails out of stream channels and off the banks of waterbodies.**
4. **Construct trails on the contour, if it is safe to do so.** Avoid skidding straight up and down hills. Remember that trail systems that run downhill to the landing tend to concentrate runoff.



Example of small lot layout.

PLAN AHEAD

BMPs

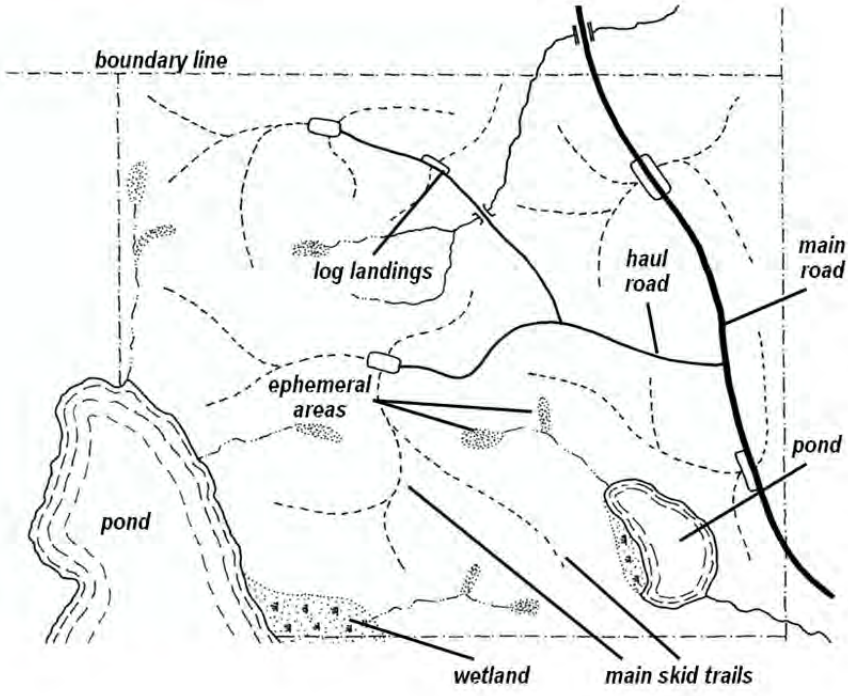
5. **Plan to divert water from the trails to the undisturbed forest floor.**

6. **Minimize trail sections on steep slopes (>15%) wherever possible.**

7. **Plan to harvest during appropriate soil and weather conditions** (preferably on dry or frozen ground)**.**

8. **Before you use old trails in the harvest area, consider whether water will run in them and where this water goes.** Use existing trails only if runoff can be kept out of waterbodies by:

   - diverting water from the trail (for example, by using water bars); and
   - using brush or other materials to prevent ruts from developing or deepening.
   - If old trails are deeply rutted and the site cannot be harvested without additional rutting, consider harvesting on frozen ground and/or relocating the skid trails.



Example of large lot layout.

BUILD IT RIGHT

BMPs

1. **Construct trails using simple structures that divert water.** Keeping water out of the trail not only prevents erosion, but also reduces equipment wear and extends the period that the trail is usable (both during and after wet weather).

2. **If possible, limit the use of equipment in filter areas, or harvest only on frozen ground.**

3. **Limit the amount of disturbed soil in filter areas and make sure that any sediment is filtered out before it reaches surface water.** This reduces the impact of skidding and forwarding.

4. **Use brush to reduce the amount of ground compaction the equipment causes, to prevent soil disturbance, and to stabilize areas of exposed soil in filter areas.**

Brush on skid trails, as well as frozen ground, helps minimize soil disturbance and rutting.

KEY ISSUE

Water Diversions for Trails

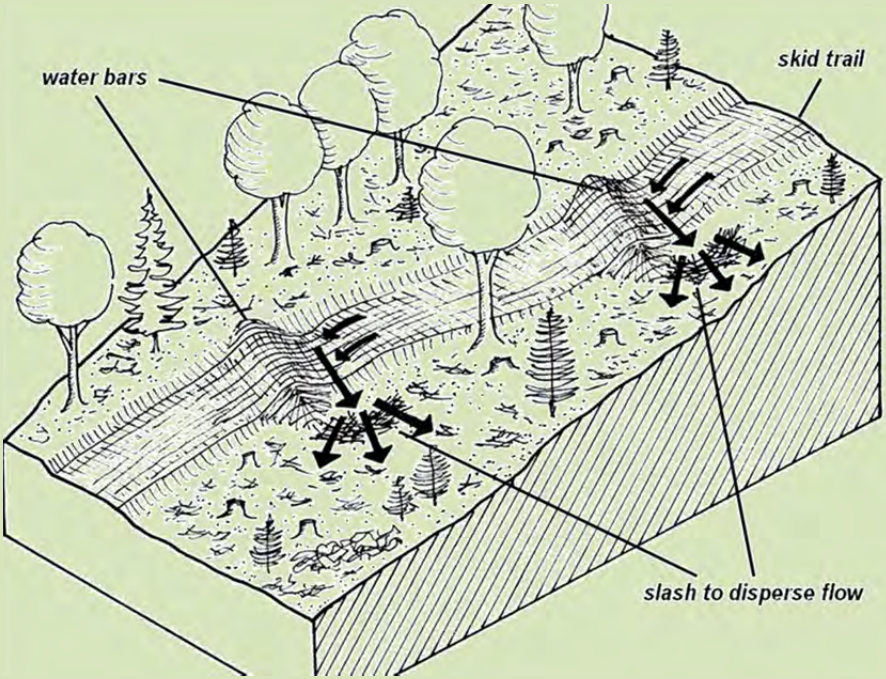
BMPs

1. **Install water bars, skid humps, or other diversions to move water off the trail, preferably before it reaches the filter area.**

2. **Locate water bars and other diversions frequently enough to prevent water from accumulating, based on Table E.** On some sites, choosing appropriate locations for diversions may be more important than their spacing.

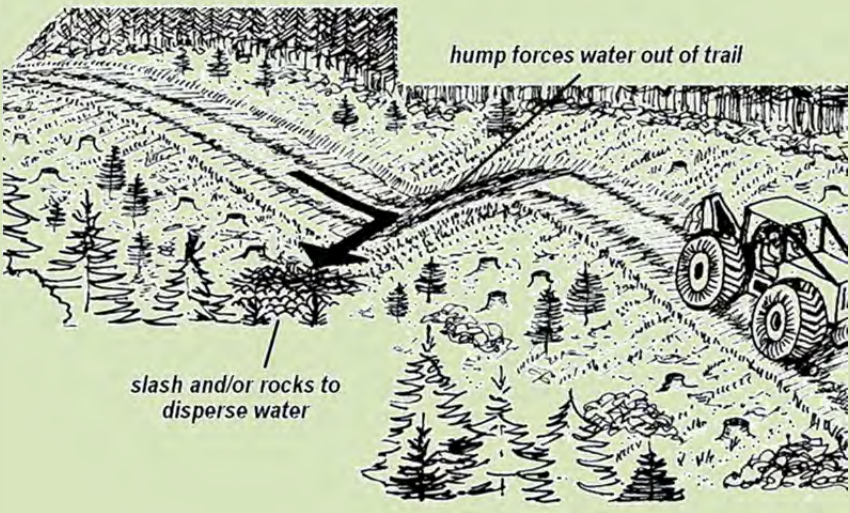
Table E
Water Bar Spacing Guidelines

Slope (%)	Spacing (ft.)
1-2	250-400
3-5	135-250
6-10	80-135
11-15	60-80
16-20	45-60
21+	<45



BMPs

3. **Make water bars at least 6-12 inches deep, 6-12 inches high, and install them at a 30-degree angle to the trail.**
4. **Extend the water bar inlet and outlet 1 foot or more beyond the trail to keep the diverted water from re-entering the trail.**
5. **Use the terrain to incorporate natural skid humps into the trail layout, to help divert water from the trail.**
6. **Put brush in the trail, as needed, to help disperse water.**



Skid hump.

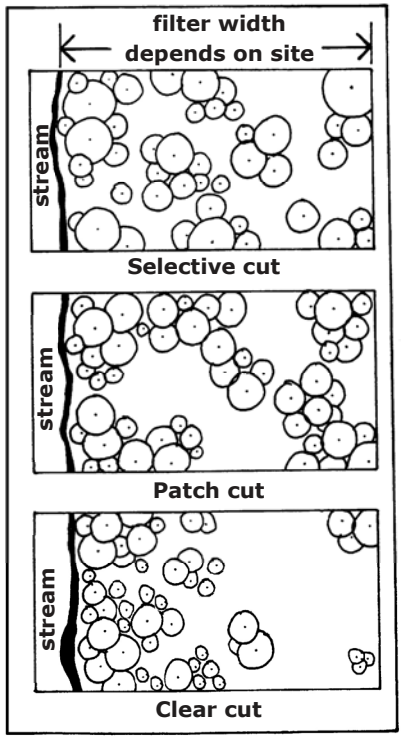
HARVEST IT RIGHT

Trees and other vegetation are important components of filter areas. One of the most important BMPs for trails is to keep enough trees and other vegetation within the filter area to provide adequate shade, stabilize the banks, limit impacts to soils, and supply organic material to the water.

STOP **Harvest restrictions and required practices may apply in some jurisdictions. Call the Maine Forest Service at (800) 367-0223 in-state or (207) 287-2791 for assistance.**

BMPs

1. **Modify the filter area width as needed to achieve the goals mentioned above.**
2. **Maintain a diverse species composition.**
3. **Retain a range of both larger- and smaller-diameter trees.**
4. **Leave an adequate canopy of trees and shrubs to shade the water surface and provide leaf litter.**
5. **Limit harvesting that removes most of the forest structure** (like clearcuts or overstory removal) **in filter areas.** Some small patch openings may be appropriate if they maintain or enhance the forest structure.
6. **In general, harvest less and less intensively as you get nearer to the waterbody, although harvest intensity will vary with local stand conditions.**
7. **Use directional felling to drop trees away from waterbodies.** Avoid dropping slash or logs into stream channels and other waterbodies.
8. **Remove slash that has fallen into waterbodies with a boom, winch, or by hand.** Leave any tops or stems that have fallen into the water naturally.



No matter the type of cut, always retain more trees near waterbodies

MAINTAIN IT

BMPs

1. **Use brush on main trails and in filter areas to prevent ruts from developing. If ruts develop anyway, stabilize them using more brush and consider relocating to firmer ground, or waiting for drier or frozen conditions.**

2. **Inspect and maintain water bars periodically to prevent water channels from developing in the trails.**

3. **Stay alert to weather forecasts of significant rain or substantial thawing.** Consider:

   - limiting equipment use, working in a different area, or doing other work until the site dries up or refreezes;
   - applying brush to soft areas to distribute the equipment's weight before problems develop; and
   - installing additional temporary diversions, especially water bars, to prevent water from running in the trail.

Water bars move water out of the trail onto the forest floor.

CLOSE IT OUT CORRECTLY

Proper closeout ensures that future problems do not develop.

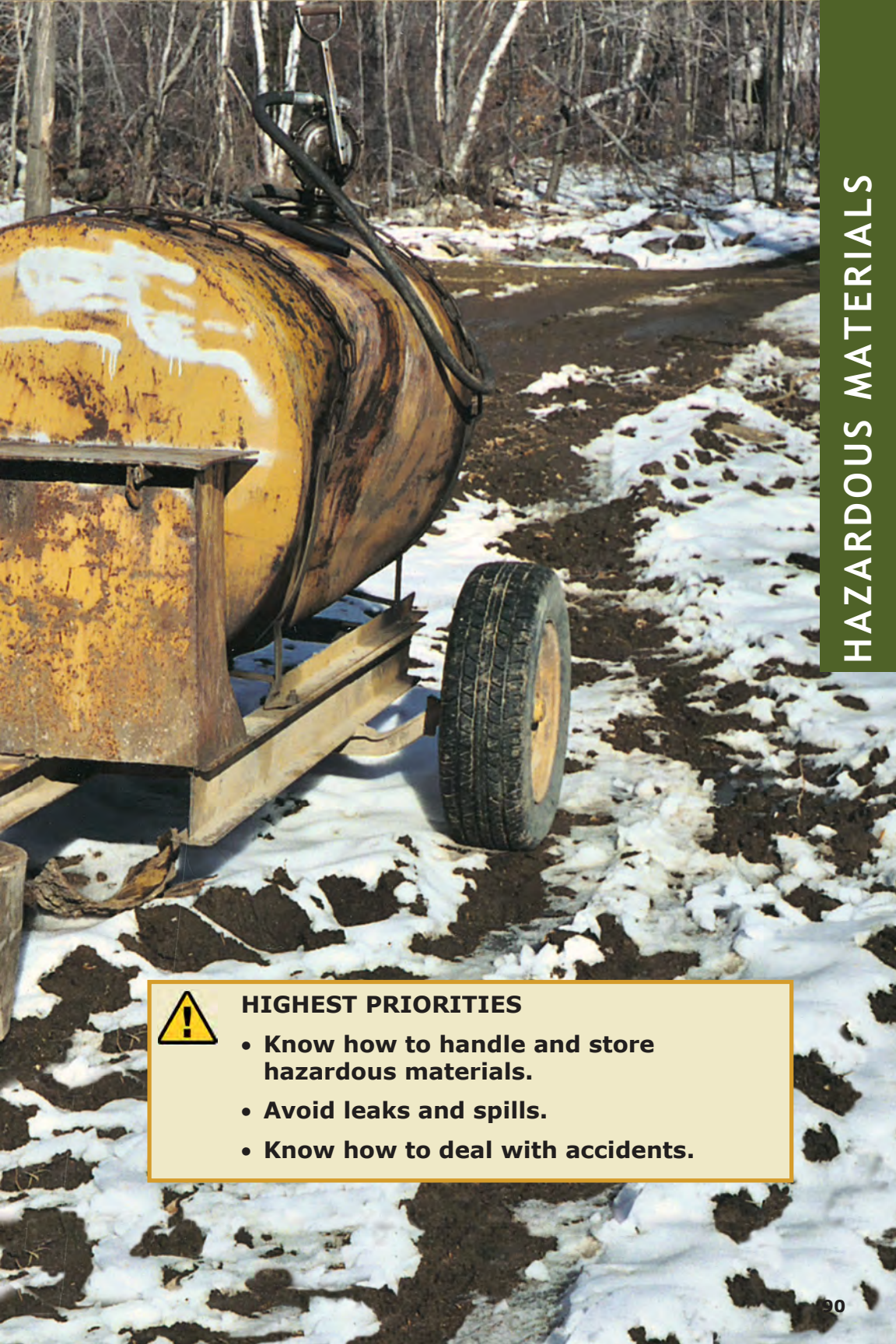
BMPs

1. **Identify the long-term monitoring and maintenance needs appropriate to the harvest site and decide who is responsible for them.** Communicate this to the landowner, forester, and logger.

A trail closed-out with water bar and seeding.

BMPs

2. **Close out unused trails as the job progresses.**
3. **Install diversions such as water bars on trails before leaving a site permanently or suspending operations for more than a few weeks. Diversions should be installed wherever water channels could develop that will carry runoff to waterbodies or their filter areas.**
4. **Smooth rutted trails, if necessary, to keep channels from forming, and to divert runoff directly into filter areas.**



HIGHEST PRIORITIES

- **Know how to handle and store hazardous materials.**
- **Avoid leaks and spills.**
- **Know how to deal with accidents.**

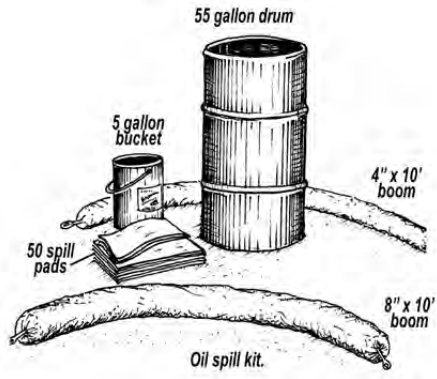
HAZARDOUS MATERIALS

FUELS, OIL AND COOLANTS

Oils, fuels, hydraulic fluids, coolants, etc. are hazardous materials commonly used at log landings. It is important to know how to handle these materials, how to avoid spills while maintaining or repairing equipment, and how to respond to accidents.

BMPs

1. **Use appropriate containers for collecting and storing oils, fuels, coolants, or hazardous wastes.** Store these materials in designated areas and remove them from the site when they are no longer needed.



2. **Maintain and repair all equipment outside of filter areas.** Inspect hoses, fuel trucks, and tanks for leaks, and make repairs immediately.
3. **Have spill kits or other absorbent materials for mopping up spills readily available.** Hay or sawdust may be adequate for very small spills. Waste containment kits are available commercially and should be on hand for larger spills.
4. **If a spill occurs, keep it from flowing off the yard and into surface waters.**
5. **Know what state agency phone numbers to call in case of an emergency.**
6. **Collect trash and dispose of it properly.**

STOP

For assistance with spills of hazardous materials, call the Department of Environmental Protection's Division of Response Services office nearest you:

Augusta	**(207) 287-7688**
Bangor	**(207) 941-4570**
Presque Isle	**(207) 764-0477**
Portland	**(207) 822-6300**

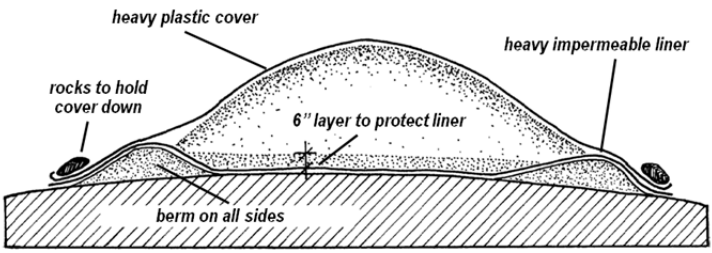
In an emergency, call
(800) 482-0777 (oils/fuels)
(800) 452-4664 (other chemicals)

TEMPORARY SAND AND SALT STORAGE

Sand and salt are often necessary to maintain safe winter conditions on truck roads. The following BMPs will help minimize or eliminate the possibility that these materials will discharge from storage areas to waterbodies or into the groundwater.

BMPs

1. **Locate sand and salt storage areas away from waterbodies, wetlands, ephemeral flow areas, or other wet areas.** At a minimum, storage areas should be outside filter areas.
2. **Locate storage areas on high flat ground, near the road, and away from water diversions that direct water into road ditches.**
3. **Enclose the storage area with a berm high enough to contain rain and snow that may collect in the storage area.** Put a heavy impermeable liner, such as heavy plastic, on the ground where the sand and salt will be stored. Run the liner up the sides of the berm. The goal is to minimize the amount of moisture reaching the groundwater.
4. **Leave at least a 6-inch layer of mixed sand and salt over the liner at all times to avoid puncturing it when digging in the pile.**
5. **Cover the sand and salt mixture with heavy plastic when it is not being used.**
6. **When abandoning the site, remove the remaining sand and salt mixture and the liner, and properly dispose of them off-site.**
7. **Return the site to its original condition.** If necessary, seed or plant with a vegetative cover.



Temporary salt and sand storage pile.

PESTICIDE USE

Pesticides include chemical agents such as herbicides, insecticides, fungicides, rodenticides, or other chemicals used to control plants or animals that are interfering with forest growth. All herbicides and pesticides are regulated by state law through the Board of Pesticide Control (Maine Department of Agriculture, Conservation and Forestry).

Commercial herbicide and pesticide applicators must be licensed and certified by the Board. Landowners or managers who wish to apply herbicides and pesticides themselves on their own land should contact the Board before proceeding.

BMPs

1. **Maintain the required buffers between spray operations and waterbodies.**
2. **Apply pesticides and herbicides during favorable weather conditions.**
3. **Abide by all pesticide label requirements, including use rates, handling, storage, and disposal.**
4. **All herbicide and pesticide handling—mixing, loading, equipment cleaning, and storage—should be done away from waterbodies, outside filter areas, and away from road drainage systems.**
5. **Remove stored chemicals from the site when they are no longer needed.**
6. **Have spill kits or other absorbent materials on hand for** mopping up spills.

STOP

Refer to the Maine Board of Pesticides Control for rules and licensing requirements regarding the use of pesticides.

Phone (207) 287-2731
Website www.maine.gov/dacf/php/pesticides

FOR MORE INFORMATION

TECHNICAL ASSISTANCE

Maine Forest Service

Maine Department of Agriculture, Conservation & Forestry
22 State House Station
Augusta, ME 04333
(800) 367-0223 (in-state only), or (207) 287-2791
www.maineforestservice.org

Maine Department of Environmental Protection

17 State House Station
Augusta, ME 04333
General number: (800) 452-1942 (in-state only) or (207) 287-7688
Bureau of Land and Water Quality: (207) 287-2111

Maine Department of Inland Fisheries and Wildlife

41 State House Station
Augusta, ME 04333
(207) 287-8000

USDA Natural Resources Conservation Service

967 Illinois Avenue, Suite #3
Bangor, ME 04401
(207) 990-9100 x 3

MAINE FOREST SERVICE PUBLICATIONS

Other Maine Forest Service publications can be found at maineforestservice.gov under “Publications” including:

- The Forest Rules of Maine
- Stumpage Price Reports
- The Forest Trees of Maine
- Forest Health and Monitoring Information Sheets
- Forest Policy and Management Information Sheets

You may also scan this QR code using an app on your smart device for immediate access to our website.

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Wiest, R.L. *A Landowner's Guide to Building Forest Access Roads.* USDA Forest Service publication NA-TP-06-98. 1998.

2017
Maine Department of Agriculture, Conservation & Forestry
Maine Forest Service
22 State House Station
1 (800) 367-0223 (in-state)
(207) 287-2791

www.maineforestservie.org

maine DEPARTMENT OF Agriculture Conservation & Forestry

Be Woods Wise!
www.bewoodswise.org
from the Maine Forest Service.

Appendix H: Forest Inventory Procedure & Design

Strata Design

To quantify the amount of mature forest on the Protected Property in 2025, the forest inventory procedure and design description below were used by Weyerhaeuser to estimate the mature forest area.

The inventory was derived through a two stage strata level estimate where existing 2016 LIDAR flights were used to derive strata assignment to each stand within the Protected Property along with stand history and NAIP imagery.

LIDAR statistics ranging from average, median, standard deviation, and 10 ft height class tabulated stand statistics were used to determine the size density matrix (stand class) for the strata. ESRIs Spatial Analyst Tool Zonal Toolbox's Tabulate Area and Zonal Statistics as Table was used to assign these statistics at the stand level to the productive portion of the stand.

Stand history, LIDAR intensity returns, and NAIP imagery were used to determine the covertype of each stand. The FMP describes the covertypes within the Protected Property.

Each stand was assigned a covertype and a stand class. These covertype and stand classes will be grouped into 'like' types. These like types will be the strata. The strata is what is sampled.

A portion of each strata is sampled at the stand level. A stand lister is selected to install forest inventory plots. Stands are sampled to make field cruise operations more efficient. Enough stands are selected and enough plots installed to get a statistically viable sample for the Protected Property.

Once the stands are selected for sample the following sampling plot procedure is followed.

Sampling Plot Procedure

Stand Designation

Weyerhaeuser will provide to the contractor a map, a stand list, and a plot list of designated plots to be cruised. The Map, Stand, & Plot List, defines all stands and plots to be cruised. Weyerhaeuser will provide all plot locations through a shapefile or table of X/Y plot locations. All spatial data will be passed from Weyerhaeuser to Contractor in the WGS 84 or NAD 83 UTM 19N meters projection format.

Plot Placement

Plots must be taken at designated X/Y coordinates defined by the Plot Allocation Table or shape file provided in the data transfer. Plots shall be a minimum of 33 feet perpendicular from any road right-of-way or stand boundary.

Plots must fall within ½ chain (33 ft) of the submitted X/Y plot location as measured by the check cruiser. Adjust for the changing slopes between plots on the line of travel to consistently place plots at the desired grid distance.

If a plot must be offset due to nearness to stand boundary or road ROW record the offset on the plot tally and on the witness flagging. Offset distance and direction must be recorded on the witness flagging at designated X/Y in the "Allocation Table". Offset plots in full ½ chain increments into the stand being cruised perpendicular to the road or stand line encountered. Hang flagging with offset distance and bearing at road edge or stand line at designated X/Y in the Plot Allocation Table.

Variable Radius Point Offset Method – Visually estimate the largest tree (dbh) in the vicinity of the offset. If greater than 36" offset 2 chains, if greater than 24" offset 1 ½ chains, if greater than 12" offset 1 chain, and if less than 12" offset ½ a chain from the hard boundary of the road edge or stand line.

Fixed Plot Offset Method – Offset plot in full ½ chain increments to prevent plot boundary from intersecting line or ROW being offset.

Sampling Methods

Sample trees shall be selected at each plot/point using the following methods:

10BAF - Variable Radius Point - Sample trees are selected using a 10 BAF glass prism or angle gauge. Sample trees shall have a Diameter at Breast Height (dbh) equal to or larger than the defined Minimum Main Plot dbh. Sample tree's midpoint at dbh must be within the limiting distance as defined by the dbh class to the 1/10th inch class in the limiting distance chart attached. Tree dbh will be measured with a steel diameter tape at the time of auditing.

If the average tree count on the 10 BAF Radius Point exceeds 10 trees per plot a 15 or 20 BAF sample may be used in place of the 10 BAF prism. A 10, 15, or 20 BAF prism sample may be used to ensure an average of 8-10 trees in the **main** plot per stand.

Install nested regeneration plot with a 1/100th acre fixed radius plot and sample trees with a diameter at Breast Height (dbh) equal to or larger than the defined Minimum Nested Plot dbh in Exhibit D and less than the Minimum Main Plot dbh. The nested plot will utilize a defined **11.78 feet** fixed length radius. The nested plot and main plot share the same plot center.

FIXED 40 - Fixed Area Radius Plot - Plot where species and size data shall be collected on trees with dbh equal to or larger than the defined Minimum Main Plot dbh. Sample tree's midpoint at dbh must be within the defined plot radius to be sampled. This plot will utilize a defined **18.62 feet** fixed length radius.

Install nested regeneration plot with a 1/100th acre fixed radius plot and sample trees with a diameter at Breast Height (dbh) equal to or larger than the defined Minimum Nested Plot dbh in Exhibit D and less than the Minimum Main Plot dbh. The nested plot will utilize a defined **11.78 feet** fixed length radius. The nested plot and main plot share the same plot center.

Plot / Point Type – The size of the variable radius point or fixed area plot will be defined at the stand # level in the "Maps and List".

Sample Plot Procedures

The following standards apply. Refer to the Plot Record Example for the complete list of fields being collected. Refer to the Species Code Table, Plot Size / BAF, and Product Code Tables for the correct codes to use in the plot record. Refer to Exhibit A Plot Allocation table for correct standkey plot number combinations and locations.

Plot Record Example:

Contractor Name or User Name	Tract Name	Stand #	Stand Acres	Plot #	Tree #	Tree Count	Species Code	Product Code	DBH Class	Merch Ht	Total Ht	HtToLiveCrown	Cruise Date	Plot Size/BAF
ED	WalterAspen2	1995003441	1	1	1	1	ASQ	Pwd	8	0	55	30	12/19/2015	BAF10NA

Stand Information

Required information for each stand sampled includes:

1. **Stand #** – The "Allocation Table" will describe the proper identification coding.
2. **TractName** – Project Name
3. **Contractor Name or User Name** - Name of individual cruiser tallying the plot.
4. **Cruise Date** of plot field sampling (first day when sampling occurs over multiple days.)
5. **Plot Size/BAF –** Plot size and configuration
    a. **FIXED 40** – Fixed area 1/40th acre radius plot (18.62' radius)
    b. **BAF10** – Variable radius point sample 2.75 prf 10 BAF

Plot Identification

Required information for each plot sampled includes:

1. **Plot Number** – described below.

2. Offset Plots need to have offset length and direction of offset on plot data and/or flagging in woods.

Plot identification shall utilize a numerical sequence for all plots placed in a stand defined in the Plot Allocation Table. Weyerhaeuser will assign the plot numbers.

Plot centers on cruise plots shall be marked with flagging tied to a stake, a wire flag, or a flag shoved in the ground. Wire flag must be used if snow is on the ground. If flagging shoved in ground flagging extending from ground plot center must be 2.5' long at minimum and flagging must be firmly in ground. The plot center is where the stake, flag, or flagging enters the ground.

'Witness Flags' shall also be attached to a tree limb near plot center to aid in location. This witness flag shall be at least 3 feet long, as measured from the knot to the longest end, and shall be attached at eye level within 10 feet of plot center. In stands where eye-level stems do not exist within the 10-foot limit, attach one 3-foot or longer Witness Flag on a shrub or tree stem at least 3 feet high nearest the plot center, and two other 3-foot Witness Flags on the nearest tree or shrub stems at eye-height. It is permissible to place one Witness Flag on the tree to be measured on the plot nearest plot center when eye-level stems do not exist near plot center. If the plot is a "No Tally" plot, using the first eye-level stem along the travel route is permissible. This Witness Flag shall include the direction and approximate distance back to "No Tally" plot center, and direction and distance to the next plot. The color(s) of ribbon shall be as specified in the "Cruise Definitions" or in writing by the contract administrator.

Write the plot number, the cruiser initials, and date on the Witness Flag with a ***permanent-ink*** marker. The ink color for the marker shall contrast with the colors used in the ribbon.

Tree Data – All plots

All live trees with a dbh equal to or greater than the minimum main plot dbh. The first tree on the plot will be flagged or a vertical line placed on the tree. Fixed radius and BAF plot tree identification will continue in a clockwise sequence from the first measured tree. Fixed strip plot tree identification will continue in a zig zag pattern back to plot center from the first tree. The last tree on the first side of the strip will have a '1' entered in the comments of the tree record.

All plot radius, plot lengths, and limiting distance measurements are adjusted for slope to horizontal distance.

Required information for each sample tree:

1. **Tree #** – Number assigned to tree in sequence tallying clockwise from the first north tree.
2. **Species Code** – See "Species Code Table"
3. **Product Code** – See "Product Code Table.

4. **DBH** to nearest 1-inch class. For example, the 5-inch class will range from 4.6 to 5.59 inches.
5. **Merchantable or Stopper Height (MHt)** - Record to nearest ½ log in trees where highest product is limited due to defect or small end diameter inside bark. Regeneration and Cull products are to be recorded as a '0' merchantable height. Only broken top trees and trees with severe crook require the cruiser to enter a merchantable height call for pulpwood trees. All sawbolt and sawlog trees require the cruiser to enter a merchantable height call. Acceptable codes = 0, 1.0, 1.5, 2.0, 2.5, etc.
6. **Tree Count** – Number of trees with the same species, product, merchantable height, and total height combination. In most instances this will be recorded as '1' for 5"+ dbh trees. Having a tree count of greater than 1 is acceptable.
7. Each tree with a dbh class of 5"+ will be a single record in the tally sheet.
8. Trees with a fork below dbh will be tallied as two separate trees.
9. Trees which fork immediately above dbh will be tallied as one tree with the product calls being made only on the dominant stem.
10. Mark all "In" trees with a paint stick with a horizontal line at dbh and facing towards the plot center.
11. Trees measured for limiting distance and determined to be "Out" shall have an "X" marked on the tree at DBH and facing towards plot center.

All borderline trees shall be measured from the 'Center of the Tree' at the measured dbh and all distances shall be Horizontal (slope correction shall be applied as appropriate). Identifying the Limiting Distance point for all borderline trees using paint sticks or lumber crayons is encouraged. A horizontal line may be placed to show where DBH was measured with a vertical line crossing it to show the Center of the Tree. All trees determined to be borderline by the check cruiser will be verified using this mark when such trees are so marked.

Limiting distances for prism plot trees shall be computed using the measured dbh to the 1/10-inch times the Plot radius factor (PRF) for the prism or BAF being used. See Limiting Distance Chart. The dbh used to determine the limiting distance shall be the taped dbh as defined by the check cruiser. Limiting distances shall be computed using the DBH measured. If DBH measurement was moved up or down the stem due to stem irregularity limiting distance will be computed using the marked dbh.

Limiting distance for fixed plot radius trees shall use the defined Fixed Plot Size radius. The horizontal distance must be equal to or less than the Fixed Plot Size radius from the 'Center of the Tree' at measured dbh to plot center.

Tree Data - Total Height Trees

At least 7 trees per Predominant (top 3) species and 5 trees every other species across three different diameter classes greater than or equal to 5" dbh class need THt measurement in each stand. These trees should be selected across all plots in the stand as evenly distributed as

possible. If 7/5 trees per species are not obtainable in dbh classes equal to or greater than 5" trees less than 5" should be measured for total height to get tree count per species. Do not go off plot to obtain total height trees.

In addition to the data required for all plots above:

1. **Total Tree Height (THt)** - Record the total height (feet) for all trees in the plot to the tip of the tree. Trees should be measured to the highest tip of the tree live or dead.
2. If a fork crotch occurs at or above 4.5 feet on the high ground side the tree is treated as a single tree. Measure the height of the best fork.
3. If a tree is leaning total height is the true bole length from the high side of the stump to the tip of the tree.
4. **Height To Live Crown (HtToLiveCrown)** – Live Crown Base is defined below. Height to Live Crown is the length from the base of the tree to the Live Crown Base. All THt trees need a HtToLiveCrown measure and tally.

Cruise Compilation

After the plots are collected the inventory will be calculated at the stand level using the correct plot size/scale to expand the tree list into a stand level estimate using productive acres. As stated in the FMP the tree list will contain species, product, dbh class, total height, trees per acre, and basal area.

These stand level estimates will then be expanded into strata level estimates based on the strata assignment of the stand. This expansion could be based on just an average of the stand level estimates sampled or if acres are used in the stand selection process for sampling the acres will be used in the ratioing of the strata estimate from the cruised stands.

As noted in the sampling plot procedure only a subsample of total heights are collected in the sample. These sampled total heights will be used in a regression at the stand species dbh class level that takes the form below to calculate all total heights.

Total Height = EXP (b0 +b1/dbh)

The imputed coefficients of the regression will be used to calculate the total height for every dbh class by species. This regressed height is stored at the species and dbh class level for each stand sampled.

After the expansion of the strata level estimate to each stand the productive acres in each stand can be used in the mature forest monitoring and milestone process at each 10-year interval.

Appendix I: MFS Chapter 21 Rules – SWS for Timber Harvesting in Shoreland Areas

01 **DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY**

669 **BUREAU OF FORESTRY (MAINE FOREST SERVICE)**

Chapter 21: **STATEWIDE STANDARDS FOR TIMBER HARVESTING AND RELATED ACTIVITIES IN SHORELAND AREAS**

TABLE OF CONTENTS

01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

669 BUREAU OF FORESTRY

Chapter 21: STATEWIDE STANDARDS FOR TIMBER HARVESTING AND RELATED ACTIVITIES IN SHORELAND AREAS

AUTHORITY: 12 M.R.S., chapter 805, subchapter 3-A; Public Laws 2003, chapter 335; Public Laws 2013, chapter 570

Summary: This rule establishes statewide standards for timber harvesting and related activities in shoreland areas. In general, timber harvesting activities in shoreland areas must protect shoreline integrity and not expose mineral soil that can be washed into water bodies, including nonforested freshwater and coastal wetlands and tidal waters. Timber harvesting and related activities in shoreland areas below the 300 acre drainage point must leave windfirm stands of trees that provide adequate shade. If located in shoreland areas, roads used primarily for timber harvesting and related activities must be constructed and maintained to standards designed to minimize the chance of exposed soil washing into water bodies, including wetlands. Stream crossings must not disrupt the natural flow of water and must not allow sediment into water bodies.

SECTION 1. PURPOSES

The purposes of this rule include the following: to establish statewide standards for timber harvesting and related activities in shoreland areas; to resolve inconsistencies among existing standards; to provide maximum opportunity for flexibility; to protect public resources while minimizing impacts on private resources; to further the maintenance of safe and healthful conditions; prevent and control water pollution from various agents, including sediment, temperature, toxic materials, and excessive nutrient inputs; to maintain shoreline stability; to protect fish spawning grounds, aquatic life, bird and other wildlife habitat; to protect freshwater and coastal wetlands; and to conserve natural beauty, open space, and public recreational values.

SECTION 2. AMENDMENTS TO MAINE FOREST SERVICE CHAPTER 20 RULE (FOREST REGENERATION AND CLEARCUTTING STANDARDS)

(Repealed)

SECTION 3. SCOPE AND APPLICABILITY

A. **SCOPE**. This rule governs all timber harvesting and related activities conducted in, over, or near water bodies, including rivers, streams, brooks, ponds, lakes, Great Ponds, freshwater and coastal wetlands, throughout the state, unless exempted in Section 3.C. of this rule.

B. **EXCLUSIONS.** The activities described in this subsection are not considered timber harvesting and must comply with the requirements for clearing or removal of vegetation

for activities other than timber harvesting under rules promulgated by the Department of Environmental Protection, Municipal Shoreland Zoning Ordinance or the Land Use Planning Commission, depending on which entity has jurisdiction.

1. Removal of vegetation in proximity to an existing developed area. For purposes of this provision, "developed area" means a footprint encompassing structures, access roads (other than land management roads), and maintained non-forested areas, on a lot with shore frontage on any great pond, stream, pond, river, or freshwater or coastal wetland. "In proximity to" describes an envelope around a developed area, and includes all areas that:

   a. are within 50 feet of the developed area,

   b. are between the developed area and the water body,

   c. occupy an area whose width in parallel with the shoreline extends 50 feet beyond each end of the footprint of the developed area at its widest point.

   In no case shall the envelope in proximity to a developed area be less than 20,000 square feet or less than 100 feet along the shoreline.

2. Removal of vegetation in the shoreland area from parcels less than two acres in size.

3. Removal of vegetation for the primary purpose of converting the land to a use other than forestland. If a change of land use occurs on the parcel or on any portion thereof within five years of the expiration of the Forest Operations Notification or the cessation of timber harvesting and related activities, whichever is later, the residual stand must comply with the requirements for clearing or removal of vegetation for activities other than timber harvesting under rules promulgated by the Department of Environmental Protection, Municipal Shoreland Zoning Ordinance or the Land Use Planning Commission, depending on which entity has jurisdiction. If the residual stand does not comply with these requirements after the change of land use, it constitutes prima facie evidence that a violation of the MFS Chapter 21 rule has occurred.

C. **EXEMPTION**. This rule does not govern timber harvesting and related activities in forested wetlands, unless the forested wetlands lie within a shoreland area.

D. **RELATIONSHIP TO OTHER LEGAL REQUIREMENTS**. Whenever provisions of this rule are less stringent than corresponding provisions of applicable federal, state, or municipal legal requirements, the more stringent provisions shall apply.

SECTION 4. DEFINITIONS

Unless otherwise provided herein, this rule incorporates by reference the definitions contained in MFS Rule Chapter 20 (*Forest Regeneration and Clearcutting Standards*). For the purpose of 12 M.R.S., chapter 805, subchapter 3-A and this rule, the following terms are defined as follows.

A. **Brook**: See "Stream Channel."

B. **Coastal Wetland** is defined by 38 M.R.S. §480-B (2) (Supp. 2013).

C. **Change of Land Use** means that following timber harvesting the subsequent primary use for a particular area is not growing forest products. Change of land use may include, but is not limited to, conversion to farm pasture, site for growing agricultural crops, residential dwelling unit, development site, or gravel pit. The division of forest land into smaller units does not by itself automatically constitute a change of land use.

D. **Cross-sectional area of a stream channel** is determined by multiplying the stream channel width by the average stream channel depth. The stream channel width is the straight line distance from the normal high water line on one side of the channel to the normal high water line on the opposite side of the channel. The average stream channel depth is the average of the vertical distances from a straight line between the normal high water lines of the stream channel to the bottom of the channel.

E. **Crossing** means any timber harvesting and related activity involving the passage of ground-based equipment from one side to the opposite side of a water body, or to an island or upland within a water body. Such activities include, but are not limited to construction of roads, fords, bridges, and culverts, as well as maintenance work on these crossings.

F. **Designated Agent** means a person, company or other entity that is authorized by the landowner to act on the landowner's behalf for timber harvesting and related activities on the landowner's property.

G. **Disruption of shoreline integrity** means the alteration of the physical shape, properties, or condition of a shoreline at any location by timber harvesting and related activities. A shoreline where shoreline integrity has been disrupted is recognized by compacted, scarified and/or rutted soil, an abnormal channel or shoreline cross-section, and in the case of flowing waters, a profile and character altered from natural conditions.

H. **Essential Wildlife Habitat** means areas identified by the Commissioner, Maine Department of Inland Fisheries and Wildlife in accordance with the provisions of 12 M.R.S., §§12801 *et seq.*(2005 and Supp. 2013) and any Department of Inland Fisheries and Wildlife rules implementing that subchapter.

I. **Forested Wetland** means a freshwater wetland dominated by woody vegetation that is at least 20 feet tall.

J. **Forest Stand** means a contiguous group of trees sufficiently uniform in age class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

K. **Freshwater Wetland** means ponds, freshwater swamps, marshes, bogs and similar areas that are:

1. Inundated or saturated by surface or groundwater at a frequency and for a duration sufficient to support, and which under normal circumstances do support, a prevalence of wetland vegetation typically adapted for life in saturated soils; and,

2. Not part of a Great Pond, coastal wetland, stream, or river.

L. **Great Pond** means any inland body of water which in a natural state has a surface area in excess of 10 acres, and any inland body of water artificially formed or increased which has a surface area in excess of 30 acres.

M. **Harvest Area** means the area where timber harvesting and related activities, including the cutting of trees, skidding, yarding, and associated road construction take place. The area affected by a harvest encompasses the area within the outer boundaries of these activities, excepting unharvested areas greater than 10 acres within the area affected by a harvest.

N. **Landowner** means a person, company, or other legal entity which holds title to land, including as a joint ownership or as tenants in common. Where the ownership of the timber located on the land is different than the fee ownership of the land itself, the owners of the timber are deemed a landowner and are jointly and severally responsible with the fee landowner to comply with this rule. Where a corporate landowner is a wholly owned subsidiary of another corporation, both parent and subsidiary are deemed the same landowner.

O. **Land Management Road** means a route or track consisting of a bed of exposed mineral soil, gravel, or other surfacing materials constructed for, or created by, the passage of motorized vehicles and used primarily for timber harvesting and related activities, including associated log yards, but not including skid trails or skid roads.

P. **Licensed Forester** means a forester licensed under 32 M.R.S. §5501(3) (Supp. 2013).

Q. **Normal High Water Line** means that line which is apparent from visible markings, changes in the character of soils due to prolonged action of the water or changes in vegetation, and which distinguishes between predominantly aquatic and predominantly terrestrial land. In the case of nonforested freshwater wetlands adjacent to streams and other water bodies, the normal high water line is the upland edge of the freshwater wetland, not the edge of the open water.

R. **Permanent crossing** means any structure constructed or erected with a fixed location, in, on, or over a water body for a period exceeding 7 months in any 12 month period, including, but not limited to, culverts and bridges.

S. **Pond** means any inland body of water which in a natural state has a surface area between 4,300 square feet and 10 acres.

T. **Responsible party** means all of the following persons or entities, jointly and severally:

1. The landowner, or landowners, who owned the property at the time a timber harvest subject to this rule was conducted;

2. The landowner’s designated agent at the time a timber harvest subject to this rule was conducted;

3. The Licensed Forester and/or the employer of the Licensed Forester who supervised a timber harvest subject to this rule; and

4. The timber harvester who conducted a timber harvest subject to this rule.

U. **Residual Stand** means a stand of trees remaining in the forest following timber harvesting and related activities.

V. **River** means a free-flowing body of water, including its associated flood plain wetlands, from that point at which it provides drainage for a watershed of:

1. fifty square miles to its mouth in the jurisdiction of the Land Use Planning Commission; and,

2. twenty-five square miles to its mouth in municipalities not subject to the jurisdiction of the Land Use Planning Commission.

W. **Shoreland area** means all land areas within:

1. 250 feet, horizontal distance, of the normal high water line of:

a. Rivers below the 50 square mile drainage point in the jurisdiction of the Land Use Planning Commission;

b. Rivers below the 25 square mile drainage point in municipalities not subject to the jurisdiction of the Land Use Planning Commission;

c. Great Ponds and nonforested freshwater wetlands 10 acres or larger;

d. Any coastal wetland;

e. Any size pond or freshwater wetland identified by the Department of Inland Fisheries and Wildlife as significant wildlife habitat or essential wildlife habitat;

2. 75 feet, horizontal distance, of the normal high water line of:

a. Streams between the 300 acre drainage point and the 50 square mile drainage point in the jurisdiction of the Land Use Planning Commission;

b. Streams between the 300 acre drainage point and the 25 square mile drainage point in municipalities not subject to the jurisdiction of the Land Use Planning Commission;

3. Adjacent to:

a. The normal high water line of streams above the 300 acre drainage point; and,

b. Ponds or freshwater wetlands larger than 4,300 square feet but less than 10 acres that are not identified by the Department of Inland Fisheries and Wildlife as significant wildlife habitat or essential wildlife habitat.

X. **Shoreline**: See “Normal High Water Line” and “Coastal Wetland.”

Y. **Significant wildlife habitat** is defined by 38 M.R.S §480-B (10) (Pamph. 2013).

Z. **Skid Road or Skid Trail** means a route repeatedly used by forwarding machinery or animal to haul or drag forest products from the stump to the yard or landing, the construction of which requires minimal excavation.

AA. **Slash** means the residue, e.g., treetops and branches, left on the ground after a timber harvest.

BB. **Stand**: see "Forest Stand."

CC. **Stream**: means a stream channel upstream from the point at which it becomes a river.

DD. **Stream channel** means a channel between defined banks created by the action of surface water, which is characterized by the lack of terrestrial vegetation or by the presence of a bed, devoid of topsoil, containing waterborne deposits or exposed soil parent material or bedrock; and which is connected hydrologically with other water bodies. “Stream channel” does not include rills or gullies forming because of accelerated erosion in disturbed soils where the natural vegetative cover has been removed by human activity.

EE. **Timber harvesting** means the cutting or removing of timber for the primary purpose of selling or processing forest products.

FF. **Timber harvesting and related activities** means timber harvesting, the construction and maintenance of roads used primarily for timber harvesting, and other activities conducted to facilitate timber harvesting.

GG. **Used for navigation** means those rivers, streams or brooks used by motorized watercraft.

HH. **Water body** means any river, stream, stream channel, brook, freshwater wetland, coastal wetland, pond, lake, Great Pond, or any other hydrological feature regulated by this rule.

II. **Woody Vegetation** means live trees or woody, non-herbaceous shrubs.

JJ. **Windfirm** means the ability of a forest stand to withstand strong winds and resist windthrow, wind rocking, and major breakage.

NOTE: In the context of this definition, an assessment of windfirmness will include assessment of soil conditions, depth to bedrock, and live crown ratios and height/diameter ratios on residual trees. Trees with live crown ratios of 30 percent or greater and/or trees with height/diameter ratios of 90 or less could be considered indicators of windfirmness.

SECTION 5. SHORELINE INTEGRITY AND SEDIMENTATION

A. **APPLICABILITY**. The requirements of Section 5 apply to all timber harvesting and related activities conducted in all shoreland areas as defined in this rule.

B. **STANDARDS**. Persons conducting timber harvesting and related activities in shoreland areas must take reasonable measures to avoid the disruption of shoreline integrity, the occurrence of sedimentation of water, and the disturbance of stream banks, stream

channels, shorelines, and soil lying within ponds and wetlands. If, despite such precautions, the disruption of shoreline integrity, sedimentation of water, or the disturbance of stream banks, stream channels, shorelines, and soil lying within ponds and wetlands occurs, such conditions must be corrected. This section does not apply to crossings of water bodies conducted in compliance with Section 11 of this rule.

NOTE: For guidance on reasonable measures, consult the Bureau publication, "Best Management Practices for Forestry: Protecting Maine's Water Quality" (2004). This publication is available from the Bureau and on the Bureau's website, www.maineforestservice.gov.

SECTION 6. SLASH TREATMENT

A. Timber harvesting and related activities shall be conducted such that slash or debris is not left below the normal high water line of any water body. This section does not apply to minor, incidental amounts of slash that result from timber harvesting and related activities otherwise conducted in compliance with this section.

B. No accumulation of slash shall be left within 50 feet of:

1. the normal high water line of Great Ponds, rivers, non-forested wetlands larger than 10 acres, and tidal waters in the jurisdiction of the Land Use Planning Commission; and,

2. the normal high water line of Great Ponds, rivers, non-forested wetlands larger than 10 acres, and tidal waters in municipalities not subject to the jurisdiction of the Land Use Planning Commission.

Slash actively used to protect soil from disturbance by equipment or to stabilize exposed soil may be left in place, provided no part thereof extends more than 4 feet above the ground.

C. Between 50 feet and 250 feet of the normal high water line of a water body identified in subsection 6.B. above, all slash larger than 3 inches in diameter must be disposed of in such a manner that no part thereof extends more than 4 feet above the ground.

SECTION 7. STANDARDS FOR TIMBER HARVESTING AND RELATED ACTIVITIES IN SHORELAND AREAS REQUIRING A 250-FOOT ZONE

A. **APPLICABILITY**. The requirements of Section 7 apply to all timber harvesting and related activities in shoreland areas within 250 feet, horizontal distance, of the normal high water line of:

1. Rivers below the 50 square mile drainage point in the jurisdiction of the Land Use Planning Commission

2. Rivers below the 25 square mile drainage point in municipalities not subject to the jurisdiction of the Land Use Planning Commission;

3. Great Ponds and nonforested freshwater wetlands 10 acres or larger;

4. Any coastal wetland; and,

5. Any size pond or freshwater wetland identified by the Department of Inland Fisheries and Wildlife as significant wildlife habitat or essential wildlife habitat.

B. **SHADE AND TREE RETENTION STANDARDS**

Timber harvesting and related activities in shoreland areas subject to the requirements of Section 7 must leave adequate tree cover and shall be conducted so that a well-distributed stand of trees is retained. The requirements of this section may be satisfied by following one of the following three options:

1. **Option 1 (40% volume removal)**, which requires:

   a. Harvesting of no more than 40 percent of the total volume on each acre involved of trees 4.5 inches DBH or greater in any 10 year period is permitted. For the purposes of these standards volume may be considered to be equivalent to basal area;

   b. A well-distributed stand of trees which is windfirm, and other vegetation including existing ground cover, must be maintained; and,

   c. Within 75 feet, horizontal distance, of the normal high water line of shoreland areas regulated under this section, there must be no cleared openings. At distances greater than 75 feet, horizontal distance, of the normal high water line, timber harvesting and related activities must not create single cleared openings greater than 14,000 square feet in the forest canopy. Where such openings exceed 10,000 square feet, they must be at least 100 feet apart. Such cleared openings will be included in the calculation of total volume removal. For the purposes of these standards, volume may be considered equivalent to basal area.

2. **Option 2 (60 square foot basal area retention)**, which requires:

   a. The residual stand must contain an average basal area of at least 60 square feet per acre of woody vegetation greater than or equal to 1.0 inch DBH, of which 40 square feet per acre must be greater than or equal to 4.5 inches DBH;

   b. A well-distributed stand of trees which is windfirm, and other vegetation including existing ground cover, must be maintained; and,

   c. Within 75 feet, horizontal distance, of the normal high water line of shoreland areas regulated under this section, there must be no cleared openings. At distances greater than 75 feet, horizontal distance, of the normal high water line, timber harvesting and related activities must not create single cleared openings greater than 14,000 square feet in the forest canopy. Where such openings exceed 10,000 square feet, they must be at least 100 feet apart. Such cleared openings will be included in

the calculation of total volume removal. For the purposes of these standards, volume may be considered equivalent to basal area.

3. **Option 3 (outcome based)**, which requires: An alternative method proposed in an application, signed by a Licensed Forester or certified wildlife professional, submitted by the landowner or designated agent to the Bureau and approved by the Bureau, which provides equal or better protection of the shoreland area than this rule.

Landowners must designate on the Forest Operations Notification form required by 12 M.R.S. §§8881 *et seq.* (Supp. 2013) which option they choose to use. If landowners choose Option 1 or Option 2, compliance with this section will be determined solely on the criteria for the option chosen. If landowners choose Option 3, timber harvesting and related activities may not begin until the Bureau has approved the required application.

The Bureau may verify that adequate tree cover and a well-distributed stand of trees is retained through a field procedure that uses sample plots that are located randomly or systematically to provide a fair representation of the harvest area.

SECTION 8. STANDARDS FOR TIMBER HARVESTING AND RELATED ACTIVITIES IN SHORELAND AREAS REQUIRING A 75-FOOT ZONE

A. **APPLICABILITY**. The requirements of Section 8 apply to all timber harvesting and related activities in shoreland areas within 75 feet, horizontal distance, of the normal high water line of:

1. Streams between the 300 acre drainage point and the 50 square mile drainage point in the jurisdiction of the Land Use Planning Commission; and,

2. Between the 300 acre drainage point and the 25 square mile drainage point in municipalities not subject to the jurisdiction of the Land Use Planning Commission.

B. SHADE AND TREE RETENTION STANDARDS

Timber harvesting and related activities in shoreland areas subject to the requirements of Section 8 must leave adequate tree cover and shall be conducted so that a well-distributed stand of trees is retained. The requirements of this section may be satisfied by following one of the following three options:

1. **Option 1 (40% volume removal)**, which requires:

   a. Harvesting of no more than 40 percent of the total volume on each acre involved of trees 4.5 inches DBH or greater in any 10 year period is permitted. For the purposes of these standards volume may be considered to be equivalent to basal area;

   b. A well-distributed stand of trees which is windfirm, and other vegetation including existing ground cover, must be maintained; and,

c. There must be no cleared openings.

2. **Option 2 (60 square foot basal area retention)**, which requires:

a. The residual stand must contain an average basal area of at least 60 square feet per acre of woody vegetation greater than or equal to 1.0 inch DBH, of which 40 square feet per acre must be greater than or equal to 4.5 inches DBH;

b. A well-distributed stand of trees which is windfirm, and other vegetation including existing ground cover, must be maintained; and,

c. There must be no cleared openings.

3. **Option 3 (outcome based)**, which requires: An alternative method proposed in an application, signed by a Licensed Forester or certified wildlife professional, submitted by the landowner or designated agent to the Bureau and approved by the Bureau, which provides equal or better protection of the shoreland area than this rule.

Landowners must designate on the Forest Operations Notification form required by 12 M.R.S. §§8881 *et seq.* (Supp. 2013) which option they choose to use. If landowners choose Option 1 or Option 2, compliance with this section will be determined solely on the criteria for the option chosen. If landowners choose Option 3, timber harvesting and related activities may not begin until the Bureau has approved the required application.

The Bureau may verify that adequate tree cover and a well-distributed stand of trees is retained through a field procedure that uses sample plots that are located randomly or systematically to provide a fair representation of the harvest area.

4. **Exception**. Timber harvesting and related activities conducted in the jurisdiction of the Land Use Planning Commission between the 300 acre drainage point and the 25 square mile drainage point are not subject to the requirements of Section 8.B. of this rule, but must be conducted to retain sufficient vegetation to maintain shading of surface waters.

SECTION 9. SKID TRAILS, YARDS, AND EQUIPMENT OPERATION

A. **APPLICABILITY**. The requirements of Section 9 apply to the construction, maintenance, and use of skid trails and yards in shoreland areas. This section does not apply to crossings of water bodies conducted in compliance with Section 11 of this rule.

B. **STREAM CHANNELS**. Equipment used in timber harvesting and related activities shall not use stream channels as travel routes except when:

1. surface waters are frozen and snow covered; and,

2. the activity will not result in any ground disturbance.

C. **DESIGN, CONSTRUCTION, AND CLOSEOUT**. Skid trails and yards must be designed and constructed to prevent sediment and concentrated water runoff from entering a water body. Upon termination of their use, skid trails and yards must be stabilized.

D. **SETBACKS**

1. Except for crossings of stream channels or freshwater wetlands, equipment used in timber harvesting and related activities, including but not limited to the use of skid trails and yards, must be operated to avoid the exposure of mineral soil within 25 feet of any water body or wetland regulated by this rule. On slopes of 10 percent or greater, the setback for equipment operation must be increased by 20 feet, plus an additional 10 feet for each 5 percent increase in slope above 10 percent. These requirements are presented in an alternative format in the slope table in Section 12 of this rule.

2. The provisions of this subsection apply only to a face sloping toward the water body or freshwater or coastal wetland, provided, however, that no portion of such exposed mineral soil on a back face is closer than 25 feet from the normal high water line of a water body or upland edge of a freshwater or coastal wetland. The setback requirements of this subsection shall not apply to skid trail approaches to crossings of stream channels or freshwater wetlands.

3. Where such setbacks are impracticable, appropriate techniques shall be used to avoid sedimentation of the water body or wetland. Such techniques may include the installation of sump holes or settling basins, and/or the effective use of additional ditch relief culverts and ditch water turnouts placed to avoid sedimentation of the water body or wetland. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected.

E. **Exception**. Timber harvesting and related activities in shoreland areas of streams draining less than 300 acres and wetlands adjacent to such streams may be conducted in a manner not in conformity with the setback requirements of the foregoing subsections provided persons conducting such activities take reasonable measures to avoid the disruption of shoreline integrity, the occurrence of sedimentation of water, and the disturbance of stream banks, stream channels, shorelines, and soil lying within ponds and wetlands. If, despite such precautions, the disruption of shoreline integrity, sedimentation of water, or the disturbance of stream banks, stream channels, shorelines, and soil lying within ponds and wetlands occurs, such conditions must be corrected.

NOTE: For guidance on reasonable measures, consult the Bureau publication, “Best Management Practices for Forestry: Protecting Maine’s Water Quality” (2004). This publication is available from the Bureau and on the Bureau’s website, www.maineforestservice.gov.

SECTION 10. LAND MANAGEMENT ROAD CONSTRUCTION AND MAINTENANCE STANDARDS

A. **APPLICABILITY**. The requirements of Section 10 apply to the construction, maintenance, and use of land management roads in shoreland areas. This section does not apply to crossings of water bodies conducted in compliance with Section 11 of this rule.

B. **ROAD DESIGN, CONSTRUCTION, AND MAINTENANCE**. Land management roads, including approaches to crossings of stream channels and freshwater wetlands, ditches and other related structures, must be designed, constructed, and maintained to prevent sediment and concentrated water runoff from directly entering the water body. Surface water on or adjacent to crossing approaches must be diverted through vegetative filter strips to avoid sedimentation of the watercourse. Because roadside ditches may not extend to the resource being crossed, filter strips must be established in accordance with the slope table in Section 12 of this rule.

C. **SETBACKS**. Land management roads and associated ditches, excavation, and fill must be set back at least:

1. 100 feet from the normal high-water line of a Great Pond or a river that flows to a Great Pond, rivers draining more than 50 square miles in the jurisdiction of the Land Use Planning Commission, rivers draining more than 25 square miles in municipalities not subject to the jurisdiction of the Land Use Planning Commission, nonforested freshwater wetlands 10 acres or larger, any coastal wetland, and any pond or freshwater wetland identified by the Department of Inland Fisheries and Wildlife as significant wildlife habitat or essential wildlife habitat;

2. 50 feet from the normal high water line of streams draining more than 300 acres but less than 50 square miles in the jurisdiction of the Land Use Planning Commission and streams below the 300 acre drainage but above the 25 square mile drainage point in municipalities not subject to the jurisdiction of the Land Use Planning Commission; and,

3. 25 feet from the normal high water line of streams draining less than 300 acres and ponds or freshwater wetlands larger than 4,300 square feet but less than 10 acres that are not identified by the Department of Inland Fisheries and Wildlife as significant wildlife habitat or essential wildlife habitat.

4. **Exceptions**

a. The minimum 100 foot setback specified in subsection 1 above may be reduced to no less than 50 feet, if, prior to construction, the landowner or the landowner's designated agent demonstrates to the Bureau's satisfaction that no reasonable alternative exists and that appropriate techniques will be used to prevent sedimentation of the water body. Such techniques may include, but are not limited to, the installation of settling basins, and/or the effective use of additional ditch relief culverts and turnouts placed to avoid sedimentation of the water body. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected.

b. The minimum 50 foot setback specified in subsection 2 above may be reduced to no less than 25 feet, if, prior to construction, the landowner or the landowner's designated agent demonstrates to the Bureau's satisfaction that no reasonable alternative exists and that appropriate techniques will be used to prevent sedimentation of the water body. Such techniques may include, but are not limited to, the installation of settling

basins, and/or the effective use of additional ditch relief culverts and turnouts placed to avoid sedimentation of the water body or the disruption of shoreline integrity. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected.

5. On slopes of 10 percent or greater, the land management road setback must be increased by at least 20 feet, plus an additional 10 feet for each 5 percent increase in slope above 10 percent, but in no case may the land management road setback be less than that indicated in the slope table presented in Section 12 of this rule.

6. New land management roads are not permitted within the shoreland area along Significant River Segments as identified in 38 M.R.S. §437 (Supp. 2013), nor in Resource Protection Districts as identified in municipal shoreland zoning ordinances nor in Recreation Protection Subdistricts (P-RR) as identified by the Land Use Planning Commission, unless, prior to construction, the landowner or the landowner's designated agent makes a clear demonstration to the Bureau's satisfaction that no reasonable alternative route exists outside the shoreland zone, and that the new road must be set back as far as practicable from the normal high water line and screened from the river by existing vegetation.

D. **MAINTENANCE**. Ditches, culverts, bridges, dips, water turnouts and other water control installations associated with roads must be maintained on a regular basis to assure effective functioning. Drainage structures shall deliver a dispersed flow of water into an unscarified filter strip no less than the width indicated in the slope table set forth in Section 12 of this rule. Where such filter strip is impracticable, appropriate techniques shall be used to avoid sedimentation of the water body or wetland. Such techniques may include the installation of sump holes or settling basins, and/or the effective use of additional ditch relief culverts and ditch water turnouts placed to avoid sedimentation of the water body or wetland. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected.

E. **ROAD CLOSEOUT AND DISCONTINUANCE**. Maintenance of the water control installations required above must continue until use of the road is discontinued and the road is put to bed by effective installation of water bars or other adequate road drainage structures at appropriate intervals, constructed to avoid surface water flowing over or under the water bar, and extending sufficient distance beyond the traveled way so that water does not reenter the road surface.

F. **UPGRADING EXISTING ROADS**. Extension or enlargement of presently existing roads must conform to the provisions of this section. Any nonconforming existing road may continue to exist and to be maintained, as long as the nonconforming conditions are not made more nonconforming.

Exception. Extension or enlargement of presently existing roads need not conform to the setback requirements of Section 10.C if, prior to extension or enlargement, the landowner or the landowner's designated agent demonstrates to the Bureau's satisfaction that no reasonable alternative exists and that appropriate techniques will be used to prevent sedimentation of the water body. Such techniques may include, but are not limited to, the installation of settling basins, and/or the effective use of additional ditch relief culverts and turnouts placed to avoid sedimentation of the water body. If, despite such

precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected.

G. **ADDITIONAL MEASURES**. In addition to the foregoing minimum requirements, persons undertaking construction and maintenance of roads and stream crossings must take reasonable measures to avoid sedimentation of surface waters.

NOTE: For guidance on reasonable measures, consult the Bureau publication, "Best Management Practices for Forestry: Protecting Maine's Water Quality" (2004). This publication is available from the Bureau and on the Bureau's website, www.maineforestservice.gov.

SECTION 11. CROSSINGS OF WATER BODIES

A. **APPLICABILITY**. The requirements of Section 11 apply to all crossings of stream channels, rivers, ponds, lakes, Great Ponds, nonforested freshwater wetlands, coastal wetlands, and freshwater wetlands identified by the Department of Inland Fisheries and Wildlife as significant wildlife habitat or essential wildlife habitat.

B. **ALL CROSSINGS**

1. Crossings must allow for fish passage at all times of the year, must not impound water, and must allow for the maintenance of normal stream flows.

2. **Determination of flow**. Provided they are properly applied and used for the circumstances for which they are designed, methods including but not limited to the following are acceptable to the Bureau as means of calculating the 10 year and 25 year frequency water flows and thereby determining crossing sizes as required in this section: The United States Geological Survey (USGS) Methods; specifically: Hodgkins, G. 1999. *Estimating the Magnitude of Peak Flows for Streams in Maine for Selected Recurrence Intervals*. U.S. Geological Survey. Water Resources Investigations Report 99-4008. 45 pp.

3. **Upgrading existing crossings**. Extension or enlargement of presently existing crossings must conform to the provisions of this section. Any nonconforming existing crossing may continue to exist and be maintained, as long as the nonconforming conditions are not made more nonconforming; however, any maintenance or repair work done below the normal high water line must conform to the provisions of this section.

4. **Bureau Permits and Permit by Rule**

a. **Permits**. An application for a permit must be submitted to the Bureau at least 60 days prior to the construction of any new permanent crossing or the replacement of a permanent crossing of any waterbody subject to a 250' shoreland area as defined by §(4)(W)(1) of this rule, non-forested freshwater wetlands larger than 4,300 square feet and any crossing that will not conform to permit by rule standards. An individual permit application is required for each crossing. The permit application must contain all information required by the Bureau, including a description of how negative impacts to the resource will be avoided and minimized to

the extent practicable. When granting a permit the Bureau may impose such reasonable terms and conditions as the Bureau considers appropriate in order to satisfy the purpose set forth in its governing statutes and rules.

b. **Permit by Rule**. Crossings must conform to standards of this section to qualify for permit by rule. If a crossing does not conform to these standards an application for a full permit must be submitted per §(11)(B)(4)(a) above. A permit by rule must be submitted to the Bureau prior to construction, maintenance, alteration, and replacement of permanent crossings of waterbodies subject to a 75' shoreland area or adjacent shoreland area as defined by §(4)(W)(2) and (3) of this rule except all non-forested freshwater wetlands greater than 4,300 square feet which require a permit as described in §(11)(B)(4)(a). Multiple crossings within one township or municipality may be submitted on one permit by rule form. The permit by rule must contain all information required by the Bureau, including:

i. a map showing the location of all proposed permanent crossings. Maps must be of sufficient quality and scale for a person unfamiliar with the area to locate the crossing;

ii. for any temporary or permanent crossing that requires a permit from state or federal agencies, a copy of the approved permit or permits; and,

iii. a statement signed by the permit applicant that all temporary and permanent crossings will be constructed, maintained, and closed out in accordance with the requirements of this chapter.

c. **Exception** A permit or permit by rule is not required for the repair and maintenance of an existing crossing or for the replacement of an existing crossing, including ancillary crossing installation activities such as excavation and filling, in any protected natural resource area, as long as:

i. Erosion control measures are taken to prevent sedimentation of the water;

ii. The crossing does not block passage for fish in the protected natural resource area;

iii. For replacement crossings of a river, stream or brook:

a. The replacement crossing is designed, installed and maintained to match the natural stream grade to avoid drops or perching; and

b. As site conditions allow, crossing structures that are not open bottomed are embedded in the stream bottom at least 25% of the culvert or other structure's diameter, except that a crossing structure does not have to be embedded more than 2 feet.

iv. The Bureau is notified prior to the activity in accordance with §(11)(B)(6) of this rule.

For purposes of this subsection, "repair and maintenance" includes but is not limited to the riprapping of side slopes or culvert ends; removing debris and blockages within the crossing structure and at its inlet and outlet; and installing or replacing culvert ends if less than 50% of the crossing structure is being replaced.

5. **Other Agency Permits**

a. Any timber harvesting and related activities involving the design, construction, and maintenance of crossings on water bodies other than a stream channel or river, including crossings of Significant River Segments and freshwater wetlands identified by the Department of Inland Fisheries and Wildlife as significant wildlife habitat or essential wildlife habitat, may require a permit from the US Army Corps of Engineers. When a permit is required, the crossing is not required to meet the standards of this section provided it conforms with all applicable state and federal requirements and any permit conditions.

b. Any timber harvesting and related activities involving the design, construction, and maintenance of crossings of freshwater wetlands identified by the Department of Inland Fisheries and Wildlife as essential wildlife habitat require prior consultation with the Department of Inland Fisheries and Wildlife.

6. **Notice to Bureau**. Notification to the Bureau is required prior to construction, maintenance, alteration, and replacement of crossings. Written notice of all temporary and permanent water body crossing construction, maintenance, alteration, and replacement activities in shoreland areas regulated by this rule must be given to the Bureau prior to the commencement of such activities. Multiple crossings within one township or municipality may be submitted on one notification form. Such notice must contain all information required by the Bureau, including:

a. a map showing the location of all proposed permanent crossings. Maps must be of sufficient quality and scale for a person unfamiliar with the area to locate the crossing;

b. for any temporary or permanent crossing that requires a permit from state or federal agencies, a copy of the approved permit or permits; and,

c. a statement signed by the responsible party that all temporary and permanent crossings will be constructed, maintained, and closed out in accordance with the requirements of this chapter.

C. SKID TRAIL CROSSINGS

1. **Design and Construction**

a. All skid trail crossings of streams and rivers below the 25 square mile drainage point require a bridge or culvert sized according to the requirements of subsection 2 below.

b. Streams above the 25 square mile drainage point may be crossed using temporary structures that are not bridges or culverts but which meet the requirements of the following subsection c; or

i. when stream channels are frozen and snow-covered; or

ii. when stream channels are composed of a hard surface which will not be eroded or otherwise damaged.

c. All skid trail crossings of streams must be designed, constructed, and maintained, such that:

i. sedimentation of surface waters is reasonably avoided;

ii. there is no substantial disturbance of the bank or stream channel;

iii. fish passage is not impeded; and,

iv. water flow is not unreasonably impeded.

NOTE: For guidance on reasonable measures, consult the Bureau publication, "Best Management Practices for Forestry: Protecting Maine's Water Quality" (2004). This publication is available from the Bureau and on the Bureau's website, www.maineforestservice.gov.

2. **Bridge and Culvert Sizing**. The following requirements apply to skid trail crossings of stream channels when surface waters are unfrozen:

a. Bridges and culverts must be installed and maintained to provide an opening sufficient in size and structure to accommodate 25 year frequency water flows or with a cross-sectional area at least equal to 3times the cross-sectional area of the stream channel.

b. Temporary bridge and culvert sizes may be smaller than provided in subsection a above if techniques are effectively employed such that in the event of culvert or bridge failure, the natural course of water flow is maintained and sedimentation of the water body is avoided. Such crossing structures must be at least as wide as the channel and, if not culverts, placed above the normal high water line. Techniques may include, but are not limited to, the effective use of any, a combination of, or all of the following:

i. use of temporary skidder bridges;

ii. removing culverts prior to the onset of frozen ground conditions;

iii. using water bars in conjunction with culverts;

iv. using road dips in conjunction with culverts.

c. Culverts utilized in stream crossings must:

i. be installed at or below stream bed elevation;

ii. be seated on firm ground;

iii. have soil compacted at least halfway up the side of the culvert;

iv. be covered by soil to a minimum depth of 1 foot or according to the culvert manufacturer's specifications, whichever is greater; and

v. have a headwall at the inlet end which is adequately stabilized by rip-rap or other suitable means to reasonably avoid erosion of material around the culvert.

NOTE: For guidance on reasonable measures, consult the Bureau publication, "Best Management Practices for Forestry: Protecting Maine's Water Quality" (2004). This publication is available from the Bureau and on the Bureau's website, www.maineforestservice.gov.

d. Stream crossings allowed under this section, but located in flood hazard areas (i.e. A zones) as identified on a community's Flood Insurance Rate Maps (FIRM) or Flood Hazard Boundary Maps (FHBM), must be designed and constructed under the stricter standards contained in that community's National Flood Insurance Program (NFIP). For example, a crossing may be required to pass a 100-year flood event.

3. **Closeout**. Upon completion of timber harvesting and related activities, or upon the expiration of a Forest Operations Notification, whichever is earlier, the following requirements apply:

a. Bridges and culverts installed for stream crossings by skid trails must either:

i. comply with the standards for stream channel crossings by land management roads as set forth in this rule, or

ii. be removed and areas of exposed soil stabilized.

b. Crossing structures that are not bridges or culverts must either:

i. be removed immediately following timber harvesting and related activities, or,

ii. if frozen into the stream bed or bank, as soon as practical after snowmelt.

c. Stream channels, banks and approaches to crossings of water bodies must be immediately stabilized on completion of harvest, or if the ground is frozen and/or snow-covered, as soon as practical after snowmelt. If,

despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected.

4. **Freshwater wetlands**. Skid trail crossings, other than those areas below the normal high water line of water bodies, must avoid freshwater wetlands and must maintain the existing hydrology of such wetlands, unless there are no reasonable alternatives, as determined by the Bureau in a written decision prior to construction.

5. **Exception**. Timber harvesting and related activities in shoreland areas of streams draining less than 300 acres and wetlands adjacent to such streams may be conducted in a manner not in conformity with the requirements of the foregoing subsections provided persons conducting such activities take reasonable measures to avoid the disruption of shoreline integrity, the occurrence of sedimentation of water, and the disturbance of stream banks, stream channels, shorelines, and soil lying within ponds and wetlands. If, despite such precautions, the disruption of shoreline integrity, sedimentation of water, or the disturbance of stream banks, stream channels, shorelines, and soil lying within ponds and wetlands occurs, such conditions must be corrected

NOTE: For guidance on reasonable measures, consult the Bureau publication, "Best Management Practices for Forestry: Protecting Maine's Water Quality" (2004). This publication is available from the Bureau and on the Bureau's website, www.maineforestservice.gov.

D. LAND MANAGEMENT ROAD STREAM CROSSINGS

1. **Design, construction, and maintenance**. Land management road stream channel crossings, including approaches to stream channel crossings, ditches and other related structures, must be designed, constructed, and maintained such that:

   a. concentrated water runoff does not enter the water body or tributary stream;

   b. sedimentation of surface waters is reasonably avoided;

   c. there is no substantial disturbance of the stream bank or stream channel not directly associated with culvert or bridge installation;

   d. fish passage is not impeded; and,

   e. water flow is not unreasonably impeded.

   NOTE: For guidance on reasonable measures, consult the Bureau publication, "Best Management Practices for Forestry: Protecting Maine's Water Quality" (2004). This publication is available from the Bureau and on the Bureau's website, www.maineforestservice.gov.

2. **Bridge and culvert sizing**. The following requirements apply to land management road crossings of stream channels when surface waters are unfrozen:

   a. Bridges and culverts must be installed and maintained to provide an opening sufficient in size and structure to accommodate 25 year

frequency water flows or with a cross-sectional area at least equal to 3times the cross-sectional area of the stream channel.

b. Culverts utilized in stream crossings must:

i. be installed at or below stream bed elevation;

ii. be seated on firm ground;

iii. have soil compacted at least halfway up the side of the culvert;

iv. be covered by soil to a minimum depth of 1 foot or according to the culvert manufacturer's specifications, whichever is greater; and

v. have a headwall at the inlet end which is adequately stabilized by rip-rap or other suitable means to reasonably avoid erosion of material around the culvert.

c. If a perennial water course to be crossed is to be used for navigation, the crossing must consist of a bridge span or pipe arch with at least 4 feet of clearance during normal high water for boat traffic.

d. If the stream being crossed is a perennial watercourse and has a slope of more than 2%, a bridge or pipe arch must be used to maintain the natural streambed.

e. Fill sideslopes in a stream or floodplain wetland must be maintained at a slope no shallower than 3 horizontal to 1 vertical and no steeper than 1.5 horizontal to 1 vertical. Fill side slopes must be stabilized at the completion of the activity.

NOTE: For guidance on reasonable measures, consult the Bureau publication, “Best Management Practices for Forestry: Protecting Maine’s Water Quality” (2004). This publication is available from the Bureau and on the Bureau’s website, www.maineforestservice.gov.

f. Temporary bridge and culvert sizes may be smaller than provided in subsection a above if techniques are effectively employed such that in the event of culvert or bridge failure, the natural course of water flow is maintained and sedimentation of the water body is avoided. Such crossing structures must be at least as wide as the channel and, if not culverts, placed above the normal high water line. Techniques may include, but are not limited to, the effective use of any, a combination of, or all of the following:

i. use of temporary skidder bridges;

ii. removing culverts prior to the onset of frozen ground conditions;

iii. using water bars in conjunction with culverts; and/or,

iv. using road dips in conjunction with culverts.

3. Stream crossings allowed under this section, but located in flood hazard areas (i.e. A zones) as identified on a community's Flood Insurance Rate Maps (FIRM) or Flood Hazard Boundary Maps (FHBM), must be designed and constructed under the stricter standards contained in that community's National Flood Insurance Program (NFIP). For example, a crossing may be required to pass a 100-year flood event.

4. **Road closeout and discontinuance**. Maintenance of the water control installations required above must continue until use of the road is discontinued and the road is put to bed by taking the following actions:

a. Effective installation of water bars or other adequate road drainage structures at appropriate intervals, constructed to reasonably avoid surface water flowing over or under the water bar, and extending sufficient distance beyond the traveled way so that water does not reenter the road surface.

b. Crossing structures must be appropriately sized or dismantled and removed in a manner that reasonably avoids sedimentation of the water body.

c. Any bridge or water crossing culvert in roads to be discontinued shall satisfy one of the following requirements:

i. it shall be designed to provide an opening sufficient in size and structure to accommodate 25 year frequency water flows;

ii. it shall be designed to provide an opening with a cross-sectional area at least 3 1/2 times the cross-sectional area of the stream channel; or

iii. it shall be dismantled and removed in a fashion to reasonably avoid sedimentation of the water body.

If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected.

NOTE: For guidance on reasonable measures, consult the Bureau publication, “Best Management Practices for Forestry: Protecting Maine’s Water Quality” (2004). This publication is available from the Bureau and on the Bureau’s website, www.maineforestservice.gov.

5. **Freshwater wetlands**. Land management road crossings, other than those areas below the normal high water line of water bodies, must avoid freshwater wetlands and must maintain the existing hydrology of such wetlands, unless there are no reasonable alternatives, as determined by the Bureau in a written decision.

SECTION 12. SLOPE TABLE

Filter strips, skid trail setbacks, and land management road setbacks must be maintained as specified in the rule, but in no case shall be less than shown in the following table.

Average slope of land between exposed mineral soil and normal high water line (percent)	**Width of strip between exposed mineral soil and normal high water line (feet along surface of the ground)**
0	25
10	45
20	65
30	85
40	105
50	125
60	145
70	165

SECTION 13. RESPONSIBILTY

All responsible parties as set forth in §(4)(T)(1)-(4) of this rule may be jointly and severally responsible for compliance with this rule, and liable for violations of this rule.

SECTION 14. VARIANCE

A variance to the strict application of this rule may be granted as specified in MFS Rule Chapter 20 (“Forest Regeneration and Clearcutting Standards”, Section 6).

SECTION 15. VIOLATIONS

Any responsible party, including but not limited to a landowner, a landowner's agent or a contractor, who orders, contracts for, or conducts any activity in violation of this rule commits a civil violation, and shall be penalized in accordance with 12 M.R.S., chapter 809.

SECTION 16. EFFECTIVE DATE

A. The effective date of this rule in organized municipalities that have either accepted the statewide standards in accordance with 38 M.R.S. §438-B, sub-§2 or have adopted an ordinance identical to the statewide standards in accordance with 38 M.R.S. §438-B, sub-§3 is January 1, 2016.

B. The effective date of this rule in a municipality that either accepts the statewide standards in accordance with 38 M.R.S. §438-B, sub-§2 or adopts an ordinance identical to the statewide standards in accordance with 38 M.R.S. §438-B, sub-§3 after the effective date

specified in subsection A is the date the municipality's shoreland zoning ordinance is certified by the Commissioner of the Department of Environmental Protection.

C. The effective date of this rule in the jurisdiction of the Land Use Planning Commission is the first day of January of the second year following the year in which the Commissioner of Conservation Agriculture, Conservation and Forestry determines that at least 252 of the 336 municipalities identified by the Commissioner of Conservation as the municipalities with the highest acreage of timber harvesting activity on an annual basis for the period 1999-2003 have either accepted the statewide standards in accordance with 38 MRSA M.R.S. §438-B, sub-§2 or have adopted an ordinance identical to the statewide standards in accordance with 38 MRSA M.R.S. §438-B, sub-§3. Within 30 days of making the determination that the 252-municipality threshold has been met, the Commissioner of Conservation shall notify the Secretary of State in writing and advise the secretary of the effective date for the statewide standards.

Timber harvesting and related activities are not subject to this rule if, prior to the effective date of the rule, (1) notification has been filed with and accepted by the Bureau, and (2) timber harvesting has begun. Timber harvesting and related activities not subject to this rule are subject to the rules of the proper authority that were in effect at the time notification was filed and accepted by the Bureau and timber harvesting began.

STATUTORY AUTHORITY: 12 M.R.S. ch. 805 sub-ch. 3-A; P.L. 2003 ch. 335; P.L. 2013, ch. 570

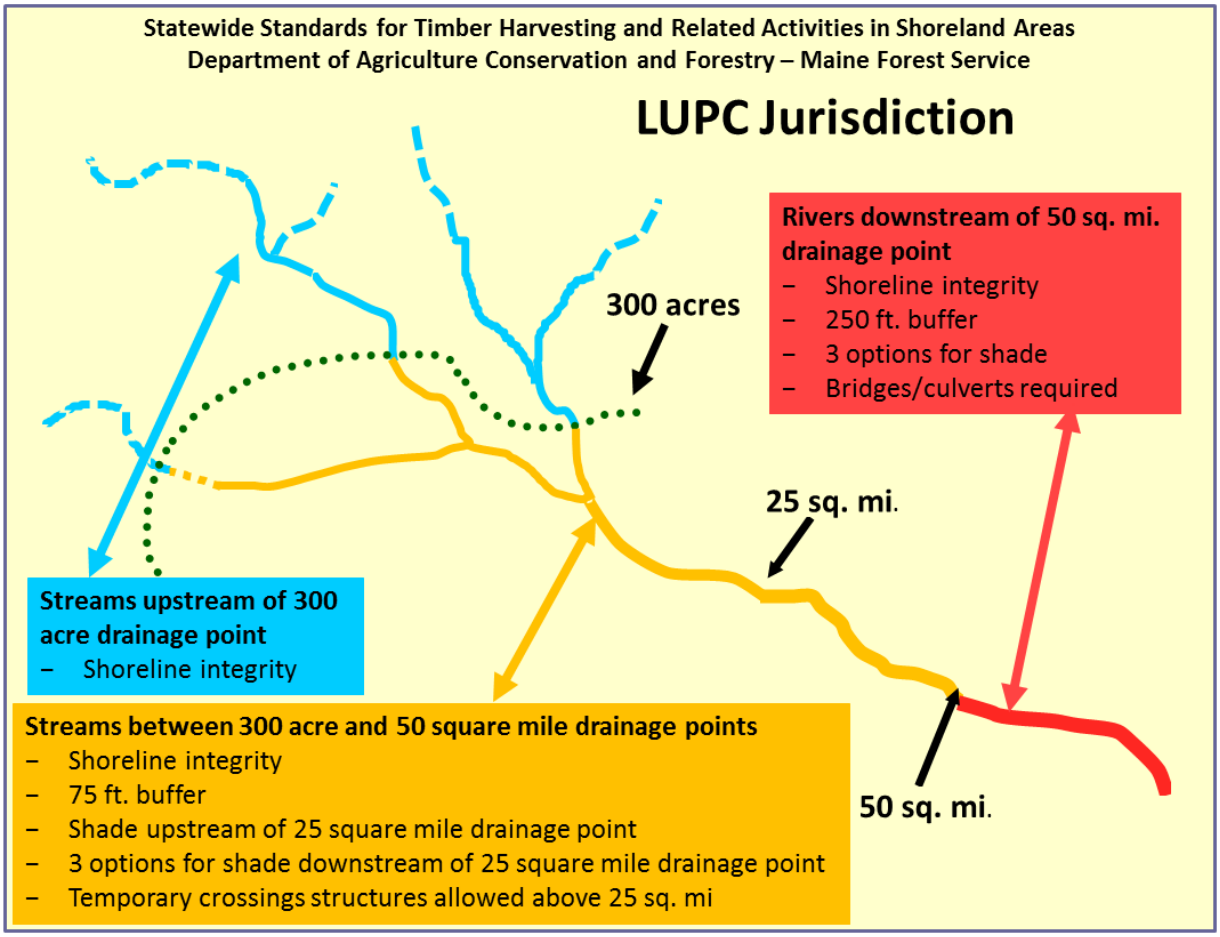
RECEIVED June 16, 2005 – filing 2005-235

CORRECTIONS:
February, 2014 – agency names, formatting

AMENDED:
August 30, 2015 – filing 2015-139 (Final adoption, major substantive)

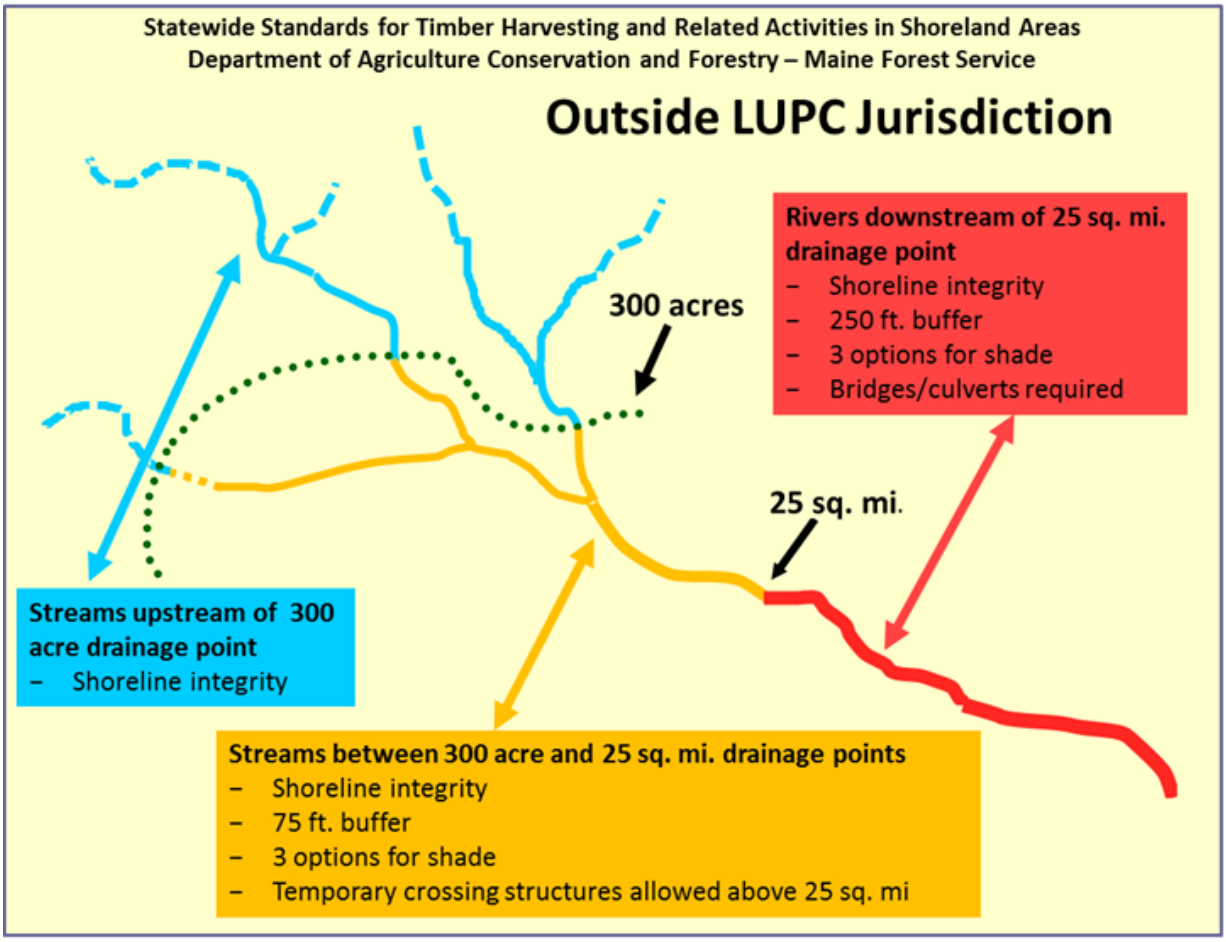
APPENDIX 1. DIAGRAMS OF APPLICATION OF THIS RULE

Figure 1. Application of this rule in the jurisdiction of the Land Use Planning Commission



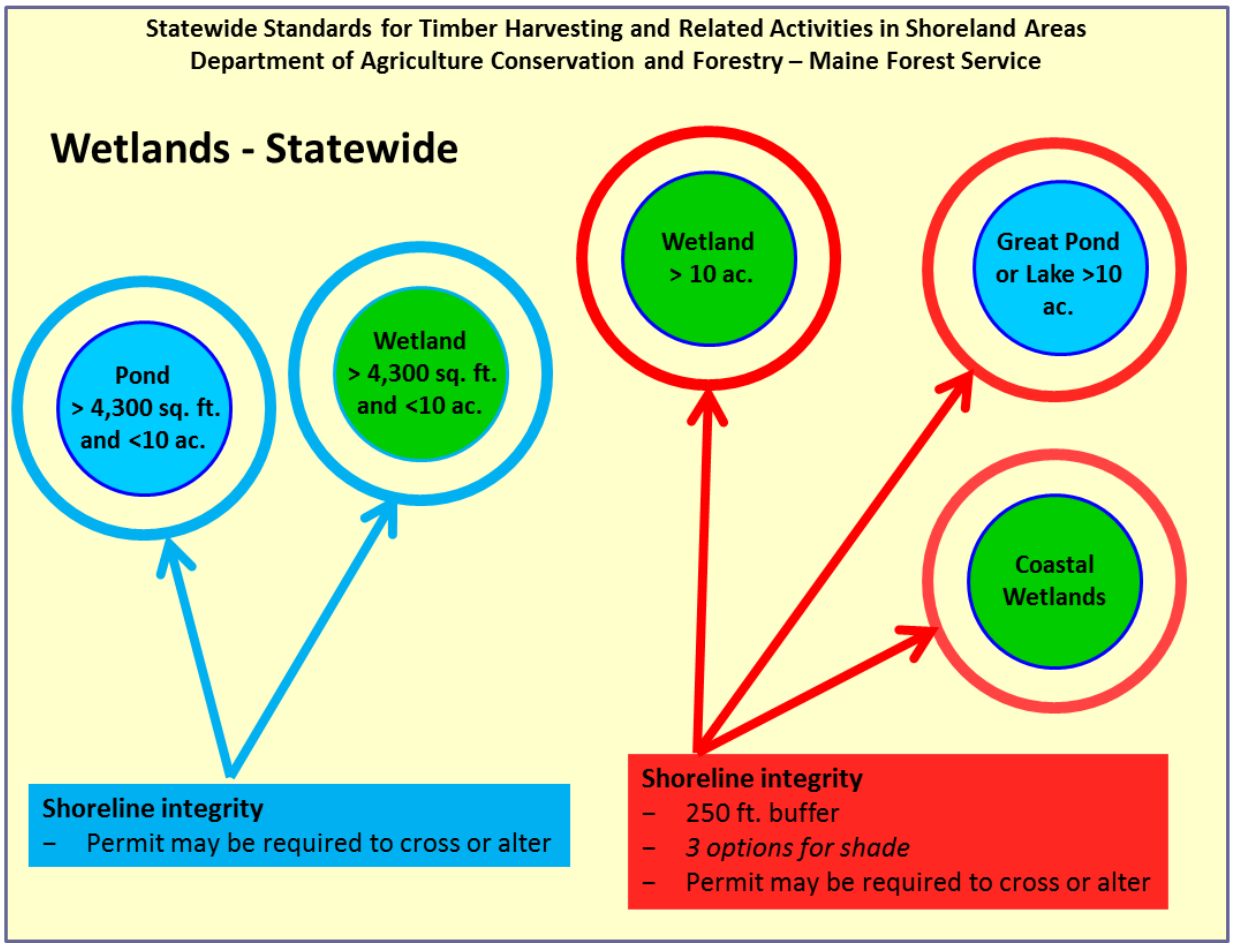
NOTE: This diagram is for informational purposes only. In the case of discrepancies, the written rule shall govern.

Figure 2. Application of this rule in municipalities not subject to the jurisdiction of the Land Use Planning Commission



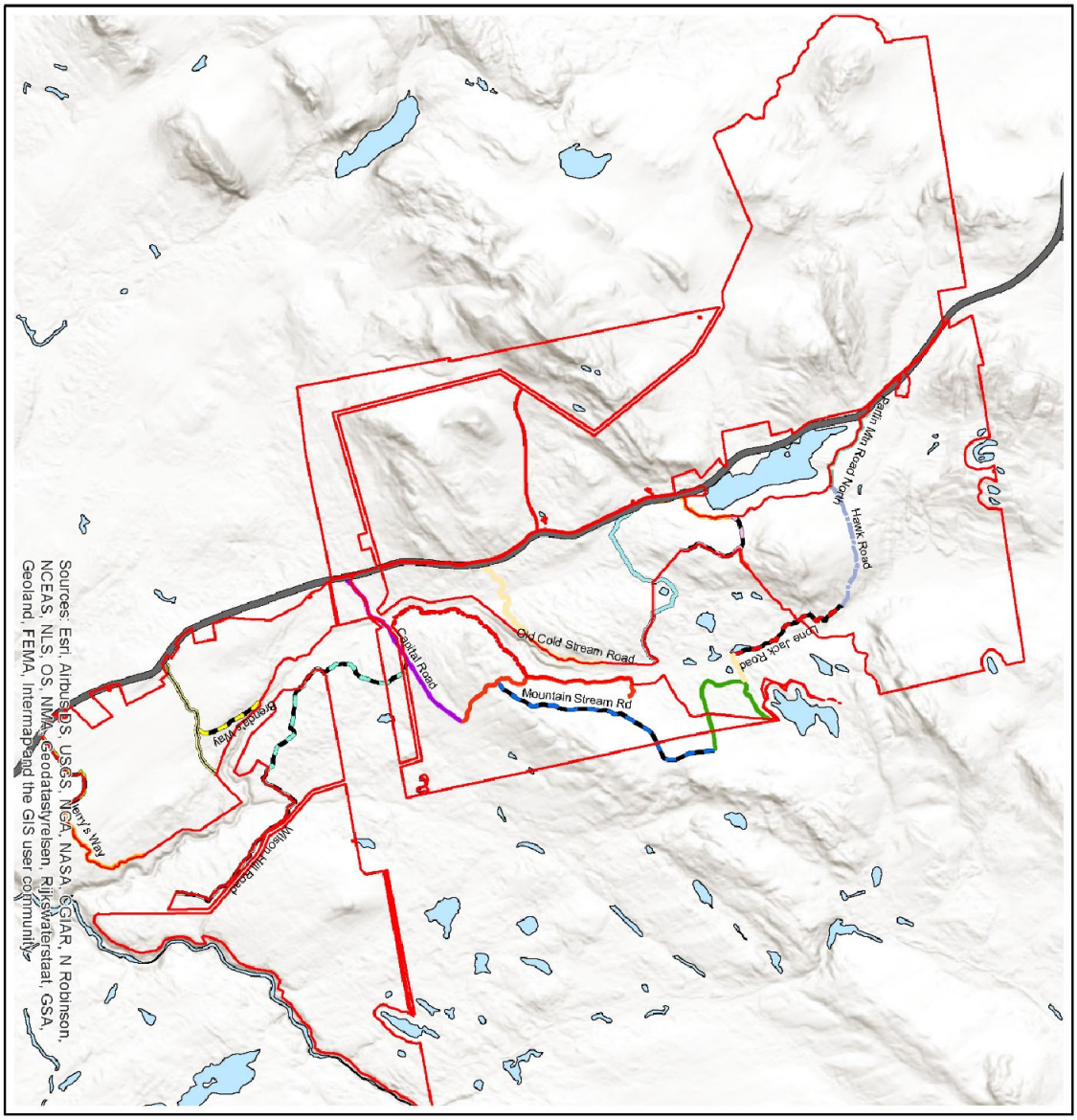
Note: This diagram is for informational purposes only. In the case of discrepancies, the written rule shall govern.

Figure 3. Application of this rule to wetlands statewide



Note: This diagram is for informational purposes only. In the case of discrepancies, the written rule shall govern.

Appendix J: Cold Stream Rights of Way Access



ATTACHMENT B
FOREST MANAGEMENT PLAN
(REDLINE)

Forest Management Plan

for the

New England Clean Energy Connect

Upper Kennebec Conservation Easement

~~July~~October 2025

Plan Preparation:

Mark W. Rabon, LF3159
Ben Kamps, LF3796
Ed Meddaugh, Biometrician
Ray Ary, Biologist
October 2025

(Add) Weyerhaeuser

PO Box 646
Bingham, Maine 04920

Table of Contents

1.0 Introduction

This Forest Management Plan (FMP) dated July 14, 2025, governs land covered by the New England Clean Energy Connect (NECEC) Upper Kennebec Conservation Easement granted by Weyerhaeuser Company, a Washington corporation, with a place of business in Bingham, Maine (Grantor or Weyerhaeuser) to the State of Maine, acting by and through its Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands (Holder) on _____ and recorded in Book _____, Page _____ in the Somerset County Registry of Deeds (Conservation Easement). The land covered by the Conservation Easement (see **Appendix A**) and subject to this FMP is referred to as the "Protected Property".

On May 11, 2020, the Maine Department of Environmental Protection (MDEP) completed its 29-month application review and issued an Order approving the NECEC project Site Location of Development Act and Natural Resources Protection Act permit applications. Special Condition #39 of the MDEP Order requires the development of a Conservation Plan to permanently conserve 40,000 acres in the vicinity of NECEC project Segment 1 (Beattie Township to The Forks Plantation) to compensate for the fragmenting effect and the related edge effect of Segment 1 on habitat in the region by promoting habitat connectivity and conservation of mature forest areas. The required area to be conserved was increased to 50,000 acres by the Maine Board of Environmental Protection (Board) Order dated July 21, 2022, that affirmed the MDEP Order. Collectively, the MDEP Order and the Board Order are referred to herein as the "Permit Orders."

In compliance with the Permit Orders, NECEC Transmission LLC (NECEC LLC), along with Weyerhaeuser and the Holder, have developed the accompanying Conservation Plan, which conserves more than 50,000 acres of largely contiguous property adjacent to Segment 1 (the Protected Property), to be managed for mature forest and habitat connectivity, including wildlife travel corridors within riparian areas and between mature forest habitats.

The Conservation Plan must:

- Establish as its primary goal the compensation for the fragmenting effect of the transmission line on habitat in the region of Segment 1 and the related edge effect by promoting habitat connectivity and conservation of mature forest areas;
- Identify the area(s), with a focus on large habitat blocks, to be conserved and explain the conservation value of this land; any conservation area must be at least 5,000 acres unless the area is adjacent to existing conserved land or the applicant demonstrates that the conservation of any smaller block, based on its location and other characteristics, is uniquely appropriate to further the goals of the Conservation Plan;

- Include a draft Forest Management Plan establishing how, consistent with the primary goal of the Conservation Plan, the conservation area(s) will be managed, including to provide blocks of habitat for species preferring mature forest habitat and wildlife travel corridors along riparian areas and between mature forest habitat;
- Explain the legal interest, such as fee ownership or a working forest conservation `easement, that will be acquired in each area; the proposed owner or holder of this interest; and the qualifications of each proposed owner or Holder;
- Include preliminary consent from any proposed owner or Holder;
- Explain how the applicant will ensure the availability of stewardship funding (e.g., funding for monitoring and enforcement) needed to support achievement of the goals of the Conservation Plan; and
- Ensure the MDEP will have third party enforcement rights.

Pursuant to Section 3.3 of the Conservation Easement, Forest Management Activities, as defined in **Appendix B**, on the Protected Property, shall be conducted in accordance with this FMP. The primary goal of this FMP is compensation for the fragmenting effect of the NECEC on habitat in the vicinity of that transmission line and the related edge effect by promoting habitat connectivity and conservation of mature forest areas. This FMP establishes how, consistent with the primary goal of the Conservation Plan, the Protected Property will be managed, including providing blocks of habitat for species preferring mature forest habitat and wildlife travel corridors along riparian areas and between mature forest habitats. This will be accomplished by modifying existing silvicultural practices on the property to create a shifting mosaic from early successional through mature forest blocks, which increases overall mature forest habitat and provides habitat connectivity, and by establishing permanent wildlife travel corridors along riparian areas. Compared to current management practices, the proposed conservation management practices described herein are intended to result in an increase from 40% in the 35+ foot age class and 13% in the 50+ foot age class today, to 65% in the 35+ foot age class and 50% in the 50+ foot age class by approximately 2065.

2.0 Property description

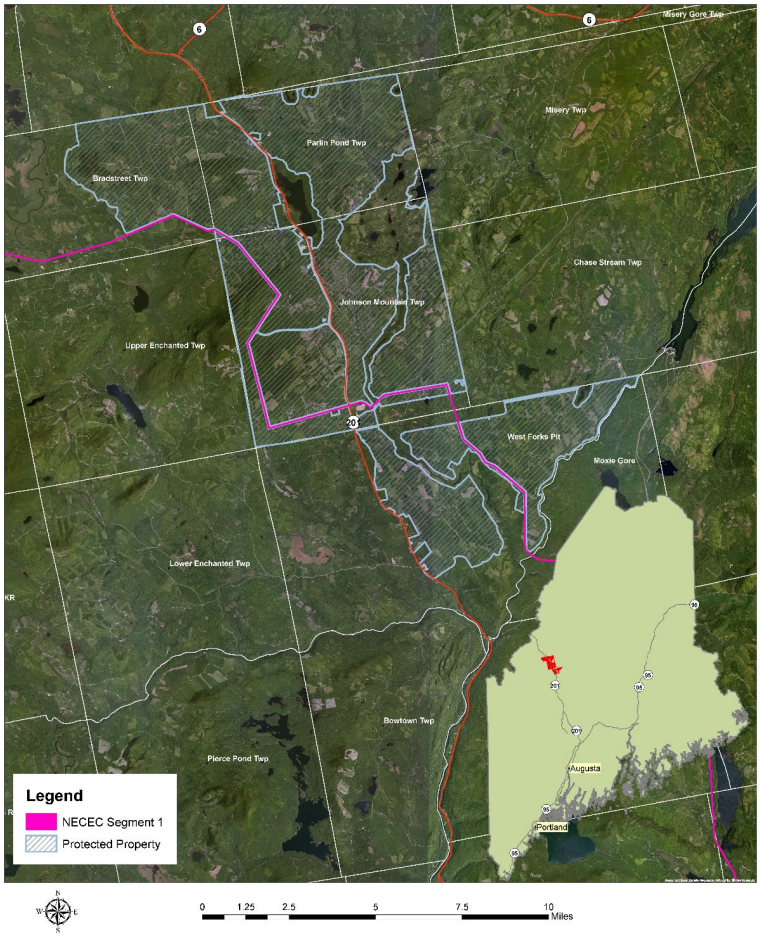
2.1 Location

The Protected Property, depicted in **Figure 1** and **Appendix C** consists of more than 50,000 acres of largely contiguous property adjacent to Segment 1 of the NECEC, an approximately 53.1-mile-long portion of the transmission line that starts at the Maine/Quebec border in Beattie Township and continues to The Forks Plantation. It is to be managed for mature forest and habitat connectivity, including wildlife travel corridors within riparian areas and between mature forest

habitats. The Protected Property is located in Bradstreet Township, Johnson Mountain Township, Parlin Pond Township, and West Forks Plantation.

Segment 1 of the NECEC bisects the Protected Property, ensuring that any fragmenting or edge effect caused by the transmission line during its operational life is mitigated by establishing the conservation measures described herein in the immediate vicinity of Segment 1 in perpetuity.

Figure 1. Map of the Protected Property.



2.2 Region

The Protected Property further enhances and extends a large landscape of protected land in the Upper Kennebec Region due to its adjacency to existing conservation lands. To the northwest is the Leuthold Forest Preserve (16,934-acres), Moose River/#5 Bog Conservation easement (4,790-acres), and the Attean Pond Conservation Easement (20,000 acres); the Cold Stream Public Land Unit (8,150-acres) extends north/south and runs through the Protected Property; and the Moosehead Conservation Easement (355,449-acres) lies to the east and north. The Protected Property fills a gap between these areas, creating almost 450,000 contiguous acres in conservation.

2.3 Ownership History

Weyerhaeuser, or its predecessor in interest, has owned the property since 1998. The property was conveyed to SDW Timber II, L.L.C. in 1998, via Quitclaim Deed without Covenant from S.D. Warren Company, which deeds are recorded at Book 2489, Page 228 (Bradstreet, T4 R7, BKP WKR), Book 2490, Page 81 (Johnson Mountain, T2 R6, BKP WKR), Book 2490, Page 228 (Parlin Pond, T3 R7, BKP WKR), and Book 2491, Page 67 (West Forks, T1 R5, BKP WKR). In December of 1998, SDW Timber II, L.L.C. changed its name to Plum Creek Maine Timberlands, L.L.C., as evidenced by document recorded at Book 2605, Page 151, Records of Somerset County. In September of 2016, Plum Creek Maine Timberlands, L.L.C. merged with and into Plum Creek Timberlands, L.P., and contemporaneously Plum Creek Timberlands, L.P., merged with and into Weyerhaeuser Company, as evidenced by Affidavit of Title recorded in the Records of Somerset County, Document 14552, Book 5097, Page 70.

2.4 Boundary Lines

A legal description, including a property map, will be developed by Weyerhaeuser and provided to Holder prior to implementation of the Conservation Plan. A boundary line survey of the Protected Property shall be completed within 24 months following the conveyance of the Conservation Easement in accordance with Paragraph II. A. *Words of Conveyance*.

The boundary line survey shall include marking features such as roads, rights-of-way, structures, and other improvements. The boundary line survey shall be recorded in accordance with the Conservation Easement, and Weyerhaeuser shall cause any boundary lines of the Protected Property not currently marked and painted to be marked and painted. Survey data will be uploaded to Weyerhaeuser's FMS System with a copy of the boundary shapefiles being shared with the Holder.

2.5 Property Tax Status, Zoning, and Legal Obligations

Table 1 below includes each Maine Land Use Planning Commission (LUPC) Account Parcel Number (APN), parcel location address, whether the parcel is enrolled in the Maine Tree Growth Program, and LUPC development subdistrict as established by Chapter 10 of LUPC's rules for the Protected Property. The Protected Property is subject to the LUPC's rules, as well as the Maine Forest Practices Act, 12 MRS §§ 8866 *et seq.*, as well as the Maine Forest Service's Chapter 20 Forest Regeneration & Clearcutting Standards. While title work is ongoing, to the best of Weyerhaeuser's knowledge the Protected Property is subject to no lease agreements, deed restrictions, covenants, or similar land use restrictions relating to forestry.

Table 1. Maine LUPC Account Parcels for the Protected Property				
APN	APN2	LocationAddress	CountyZoning	Enrolled in Maine Tree Growth?"
SO020011.15	25839011.15	Parlin Pond Twp, ME	P-RR	yes
SO014012	25829012	Johnson Mountain Twp, ME 04945	M-GN	yes
SOP05184	25330184	West Forks Plt, ME 04985	P-WL1	Very small tax parcel included in SOP05185 enrollment in tree growth
SOP05185	25330185	West Forks Plt, ME 04985	M-GN	yes
SO020015	25839015	Parlin Pond Twp, ME	M-GN	yes
SO022011	25813011	Bradstreet Twp, ME 04945		yes
SO014011.12	25829011.12	Johnson Mountain Twp, ME 04945	M-GN	yes
SOP05164	25330164	0 Dead Stream Rd, West Forks Plt, ME 04985	P-SL2	Yes, subject to a small access corridor to be removed in 2027
SO014011.1	25829011.1	Johnson Mountain Twp, ME 04945	M-GN	yes
SO014011.2	25829011.2	27 Owls Holw, Johnson Mountain Twp, ME 04985	M-GN	yes
SO020014	25839014	Parlin Pond Twp, ME 04945	P-WL3	yes
SO020011	25839011	Parlin Pond Twp, ME 04945	M-GN	yes
SOP05074	25330074	0 N Old 201 Rd, West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05074 WY does own is enrolled in tree growth, subject to a small access corridor to be removed in 2027
SOP050818	253300818	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP050818 WY does own is enrolled in tree growth
SOP05131	25330131	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05131 WY does own is

				WY does own is enrolled in tree growth
SOP05171	25330171	West Forks Plt, ME 04985	M-GN	yes
SOP05172	25330172	West Forks Plt, ME 04985	M-GN	yes
SOP05165	25330165	West Forks Plt, ME 04985	M-GN	yes
SOP05132	25330132	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05132 WY does own is enrolled in tree growth
SOP05142	25330142	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05142 WY does own is enrolled in tree growth
SOP05141	25330141	West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP05141 WY does own is enrolled in tree growth
SOP050917	253300917	3681 US Route 201, West Forks Plt, ME 04985	M-GN	What portion of tax ID SOP050917 WY does own is enrolled in tree growth

3.0 General Condition of the Forest

3.1 Forest Description

The Protected Property is a forested land area of significant breadth and diversity, with outstanding values including sizeable blocks of mature forest habitat. Mature Forest Habitat is defined as forest stands ~~that achieve a minimum threshold of a~~consisting of a mix of native species with a minimum basal area of 80 square feet per acre of live trees at least 4.5 inches in diameter at breast height, including a minimum basal area of 60 square feet per acre of live trees at least 50~~-foot-tall trees containing a mix of native species~~ feet tall, accompanied by the presence of representative levels of well distributed standing dead and downed trees, as described in Section VII.A.6 of the Conservation Easement. It is interspersed with upland, riparian, and wetland vegetative communities composed of coniferous, deciduous, and mixed-wood forest of varied age classes with approximately 40% of the area currently 35 feet in height or taller. Large blocks of the property have ecological importance as wildlife and fisheries habitat, including for species that prefer mature forest such as pine marten and white-tailed deer as well as brook trout, landlocked salmon, other fish, and many species of forest interior dwelling birds, waterfowl, reptiles, and amphibians. The Protected Property includes extensive bogs, wetlands, rivers, an abundance of seasonal and perennial streams, lakes, remote ponds and other water bodies, and unique natural features, all of which will benefit from the overall conservation of the Protected Property. The intensive conservation management described in the FMP would protect, maintain, and enhance the habitat value for these species.

The forests consist of approximately 17% hardwood stands, 40% mixed-wood stands, and 43% softwood stands, which are of varied age classes and species. Stands with trees under 35 feet in height comprise 60% of the acreage with only 13% currently taller than 50 feet.

3.2 Forest Health

The Protected Property is managed by professional foresters and biologists, in accordance with state law, utilizing forest management practices that include scientifically sound silviculture and best management practices. Foresters are responsible for field review of potential local forest health problems and concerns as they conduct their normal field duties and report observations to Supervisors who contact appropriate agencies as needed. Regular training is conducted by agencies such as the Maine Forest Service regarding the detection and recognition process for emerging forest health concerns such as Emerald Ash Borer, Hemlock Wooly Adelgid, Beech Leaf Disease, and Spruce Budworm.

Spruce budworm is a significant emerging threat to the health of balsam fir on the Protected Property. The current state-wide spruce budworm mitigation strategy includes insect monitoring

and hotspot identification through extensive L2 surveys, forest inventory analyses and risk assessments, and active engagement with the Maine Spruce Budworm (SBW) Task Force on targeted management strategies.

As needed, quarantine associated agreements and any required compliance records are kept on hand and foresters assist contractors to ensure that forest product and equipment movement off-site is in compliance.

3.3 Fire Protection

To protect timber resources, fire hazard reduction is employed broadly, and fire suppression is practiced in wildfire events. Contact with various state agencies with an emphasis on Maine Forest Service is used to ensure coordinated fire responses, such as meetings with state fire control officials in advance of an upcoming fire season to review high hazard areas.

All professional foresters, contract loggers, haulers, and road crews working on the land have fire suppression systems and are trained in their use.

The public is prohibited from building outdoor fires in fire hazard areas during periods of fire emergency and can only have fires in designated pre-approved areas. Insect infestation control and quarantine efforts can also reduce vulnerability to fire events. Healthy forest conditions are fostered through timely and careful harvests carried out by trained loggers under the supervision of professional foresters.

3.4 Hydrology

The Protected Property includes extensive bogs, wetlands, rivers, an abundance of seasonal and perennial streams, lakes, remote ponds and other water bodies, and unique natural features, all of which will benefit from the overall conservation of the Protected Property.

The Protected Property is located entirely within the upper Kennebec River watershed area - See Watershed Map in **Appendix D**. Significant streams running through the Protected Property include Bean Brook, Parlin, and Cold Streams. In total, the Protected Property includes approximately 88 miles of rivers and perennial streams, representing an extensive network of riparian corridors within the lands to be conserved. As outlined further in Section 4.2.3, two levels of buffers will be established along riparian corridors on the Protected Property: “No-Harvest Buffers” and “Mature Forest Habitat Buffers”. These Perennial Stream Buffers run from the Normal High-Water Line on the approximately 88 miles of Perennial Streams. For Riparian Wetlands, the Normal High-Water Line where the buffer begins is the upland edge of the wetland, not the edge

of the open water within the stream corridor. These buffers will improve and maintain habitat connectivity by creating Mature Forest Habitat running along Perennial Streams that will allow for increased connectivity to Mature Forest Habitat elsewhere on the Protected Property.

3.5 Topography and Soils

The topography and soils on the Protected Property are typical of forested, post-glaciated landforms. Several mountains that are part of the larger Boundary Mtn complex that runs along the border between Quebec & Canada are contained within the Protected Property. These peaks include Johnson Mtn, Bean Brook Mtn, and Catheart Mtn. Some areas of exposed bedrock are present on these slopes and scattered throughout the Protected Property.

The parent soil within the Protected Property is largely glacial derived and composed of glacial till, sandy outwash, and several prominent gravel esker features. Natural Resources Conservation Service (NRCS) information indicates a diverse soil distribution across the Protected Property with approximately fifty unique soil types as listed and mapped in the Appendix D – Soil Maps and Map Unit Details. The three largest soil types by area contained within the Protected Property are shown below:

DEC—Danforth-Elliottsville association, 3 to 15 percent slopes, extremely stony covering approximately 13% of Protected Property (NRCS).

CPB—Colonel-Pillsbury-Peru association, 0 to 8 percent slopes, very stony covering approximately 8% of the Protected Property (NRCS).

LTC—Hogback-Rawsonville complex, 4 to 25 percent slopes covering approximately 7% of the Protected Property (NRCS).

Complete soils information can be found in **Appendix E**.

4.0 Permit Order Compliance and Conservation Plan

Consistent with the primary goal of the Conservation Plan, this FMP governs how the Protected Property will be managed to increase and maintain habitat connectivity, establish Perennial Stream Buffers, promote and maintain mature Forest Stands, and achieve Mature Forest Habitat. This will, over time, provide significantly more and larger blocks of habitat for species preferring mature forest conditions and will improve, maintain, and create additional wildlife travel corridors along riparian areas and between Mature Forest Habitats that would not otherwise be present on the Protected Property.

4.1 Conservation of Mature Forest Areas

The Protected Property will be permanently managed to achieve and maintain a minimum of 50% of the Productive Forest as Mature Forest Habitat after approximately 2065. While the MDEP[1] and the Board[2] Permit Orders found that mature forest begins to provide benefits to species preferring Mature Forest Habitat when those forest stands reach 35 feet in height, in concurrence with the Holder and the Maine Department of Inland Fisheries & Wildlife, and as agreed upon to meet the terms of the Permit Orders, this FMP achieves a significantly greater height and basal area to the benefit of species preferring Mature Forest Habitat and travel corridors. Under this FMP, Forest Stands reach the condition of Mature Forest Habitat when a minimum basal area threshold of 80 square feet per acre of live trees with 60 square feet ~~basal area~~ of 50' tall or taller trees is reached. This target level threshold will be then maintained in perpetuity utilizing Shifting Mosaic ~~forest~~Forest management practices that promotes a dynamic landscape characterized by a diversity of growth stages, age classes, and species composition. Currently in 2025, the Productive Forest area that meets the Mature Forest Habitat definition on the Protected Property is approximately 13%, at just over 6,000 acres.

As shown in **Figure 2**, under this FMP, over the next forty years the percentage of trees over 50 feet in height is intended to increase from approximately 13% today to 50% by approximately 2065. To ensure this target is met, mature forest conditions will be monitored and managed by targeting particular milestones which will be reviewed as part of each annual meeting between Grantor and Holder. The target goal of 50% of productive acres in mature forest by 2065 will then be sustained in perpetuity.

Climate change effects may affect the growth models used as a basis for the Mature Forest Habitat projections outlined in this FMP, including the anticipated ten-year milestones. Climate

[1] MDEP Order at 79: "Since the hearing, the Department has continued its review of the evidence in the record and identified additional areas where taller vegetation, with a minimum height of 35 feet, is appropriate to support wildlife…."
[2] Board Order at 53: "While vegetation with a minimum height of 35 feet is not equivalent to full canopy height vegetation in terms of the cover it provides, the record evidence supports that vegetation of 30 feet and taller aids wildlife movement."

change increases uncertainty about future forest conditions, which cannot be predicted by current growth models. A changing climate will likely affect tree growth rates, mortality, disturbance patterns and the distribution of tree species after disturbances. Models suggest shifts in the ranges of trees and other plants, animals, and pests. More frequent extreme wildfires and weather events are expected to alter disturbance regimes and will require adjustments in forest operations and planning. Management strategies to address these uncertainties must change over time, guided by the best available science.

Figure 2. Mature Forest Milestones - Estimated Mature ~~(≥60 sq ft of BA of 50' tall trees)~~Habitat at each 10-year increment on ~~productive acres~~Productive Acres

Mature Forest Milestones	
2025	13%
2035	20%
2045	30%
2055	40%
2065	50%

This represents a significant increase compared to current conditions, as well as to the projected forest conditions in 2065 under management practices that follow only the minimum state standards or, alternatively, if the property were developed. A visual depiction of current forest heights by age class is included as **Figure 3**, and a visual depiction of forest heights by age class anticipated in 2065 and beyond under the FMP is included as **Figure 4**. Note that the 2025 Mature Forest Milestone acreage at 13% is derived exclusively from the ≥50 Height Group as depicted in Figure 3.

Figure 3. 2025 Forest Heights by Age Class Under Current Management

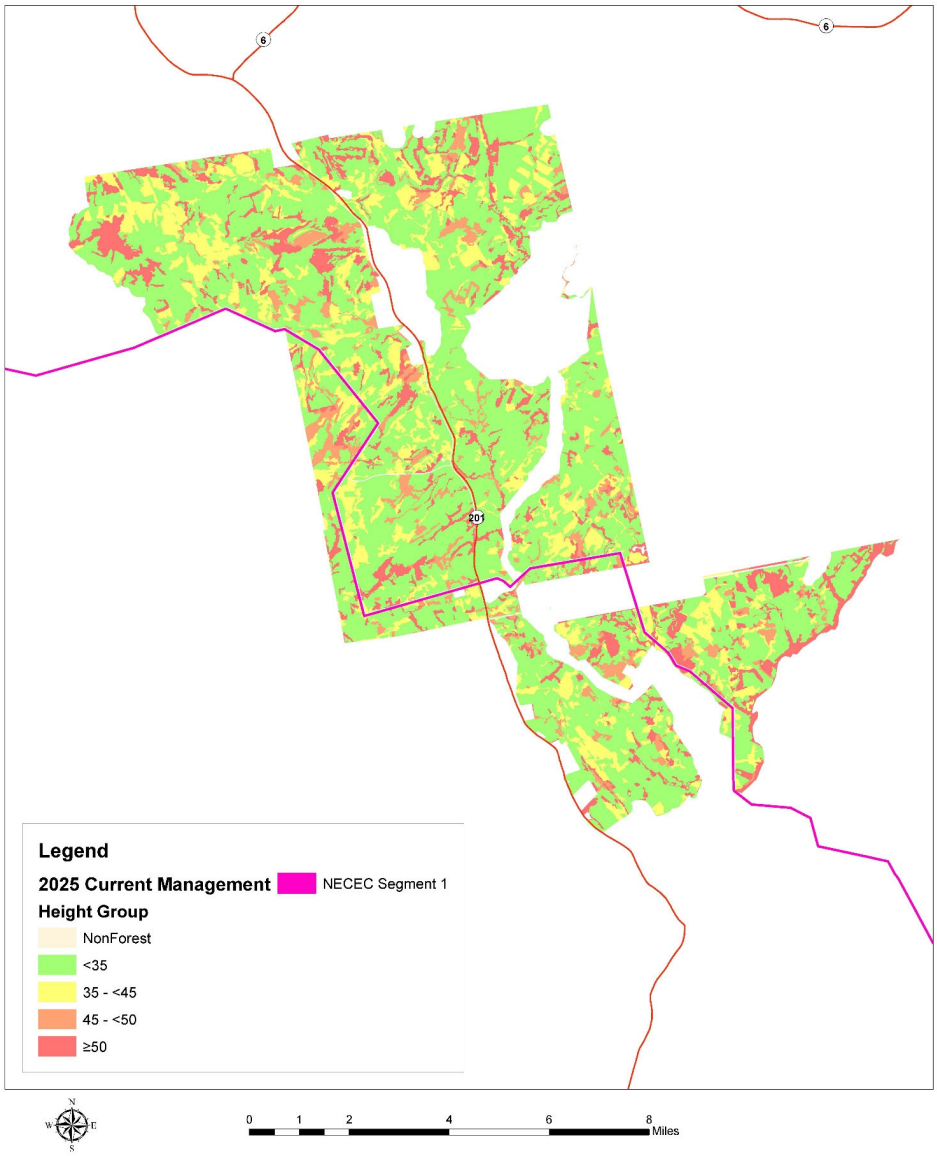
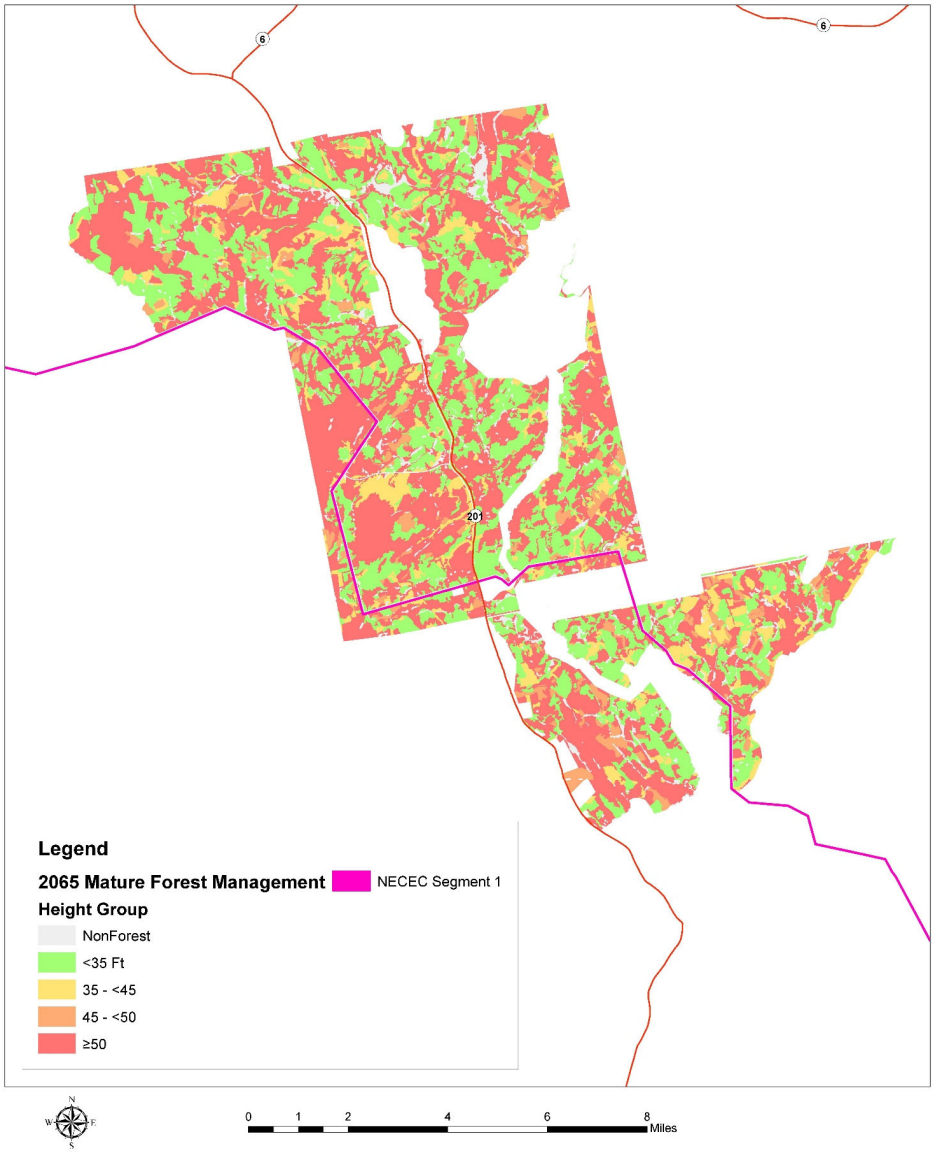


Figure 4. Anticipated 2065 Forest Heights by Age Class Under Proposed Management



4.2 Harvest Planning, Mature Forest Measurement, and Road Construction Approach

Ongoing harvests, including those in mature stands, are planned throughout the interim period leading up to 2065. The Forest Management Plan is structured to ensure that by 2065, at least 50% of the productive forestland will reach mature forest condition, and that all interim milestones will be met.

As stated in Section 5.3, the Protected Property will be harvest scheduled at a minimum of every 10 years with Woodstock using the newest inventory available, or more frequently as needed to account for significant storms, forest health events, or other impacts to the Mature Forest Habitat. The model will be run to ensure the mature milestones are met, and measurements will be taken to confirm milestones are reached. Harvest activities are scheduled and implemented in accordance with the milestones outlined in Section 5.3, with progress tracked at regular intervals (see Table: Mature Forest Milestones). The one-year and ten-year planning maps are shown below.

One and 10-12 Year Potential Harvest Areas

The maps below display the current modeled potential harvest areas for the Protected Property for 2026 in **Figure 5**, and over the next 10-to-12-year timeframe in **Figure 6** (both are for planning purposes only and are subject to change). Also shown are the increased perennial buffers along with the approximate scheduled harvest period. No harvesting activity is planned within the No-Harvest Buffer. Within the Mature Forest Buffer, approximately 50 acres of thinning treatments are planned annually from 2026 through 2036. Such treatments will not delay development of Mature Forest Habitat within such buffers.

Figure 5. Current Targeted Harvest Areas for 2026

(Added graphics)

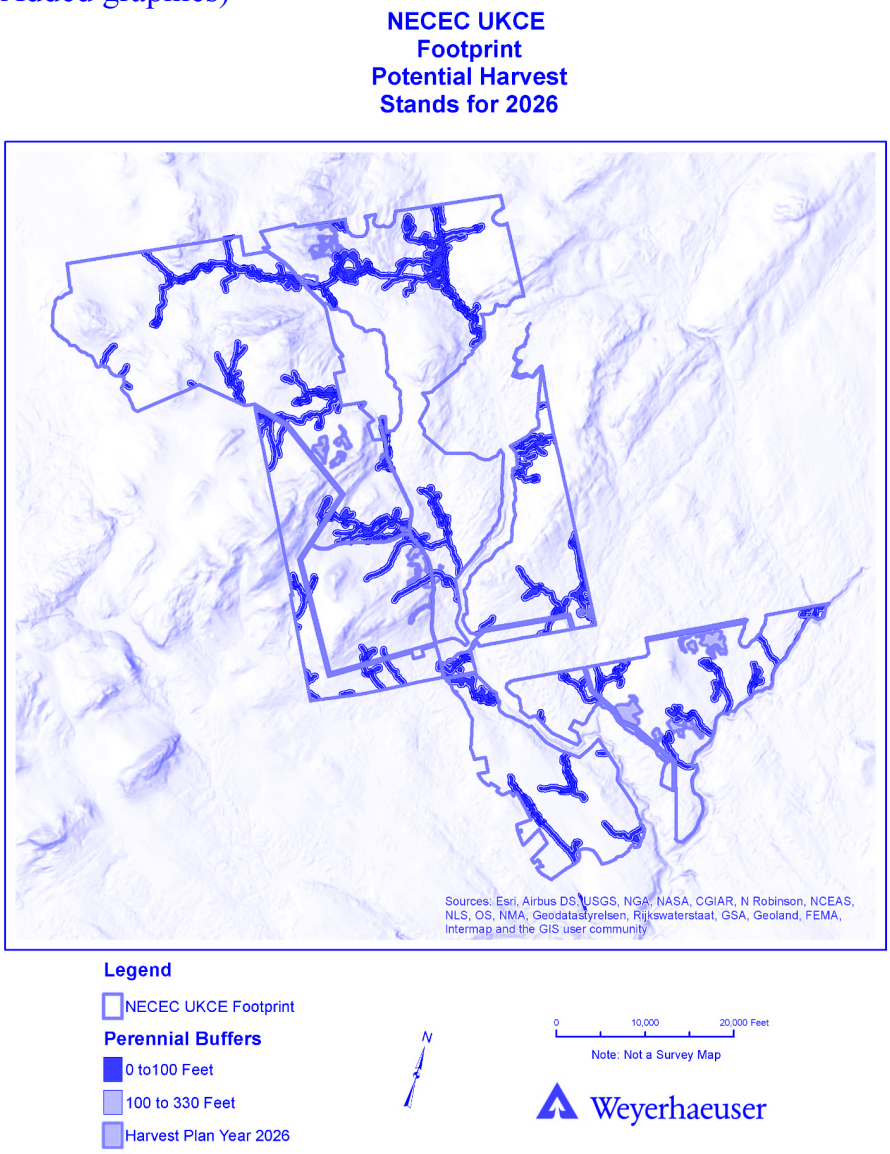
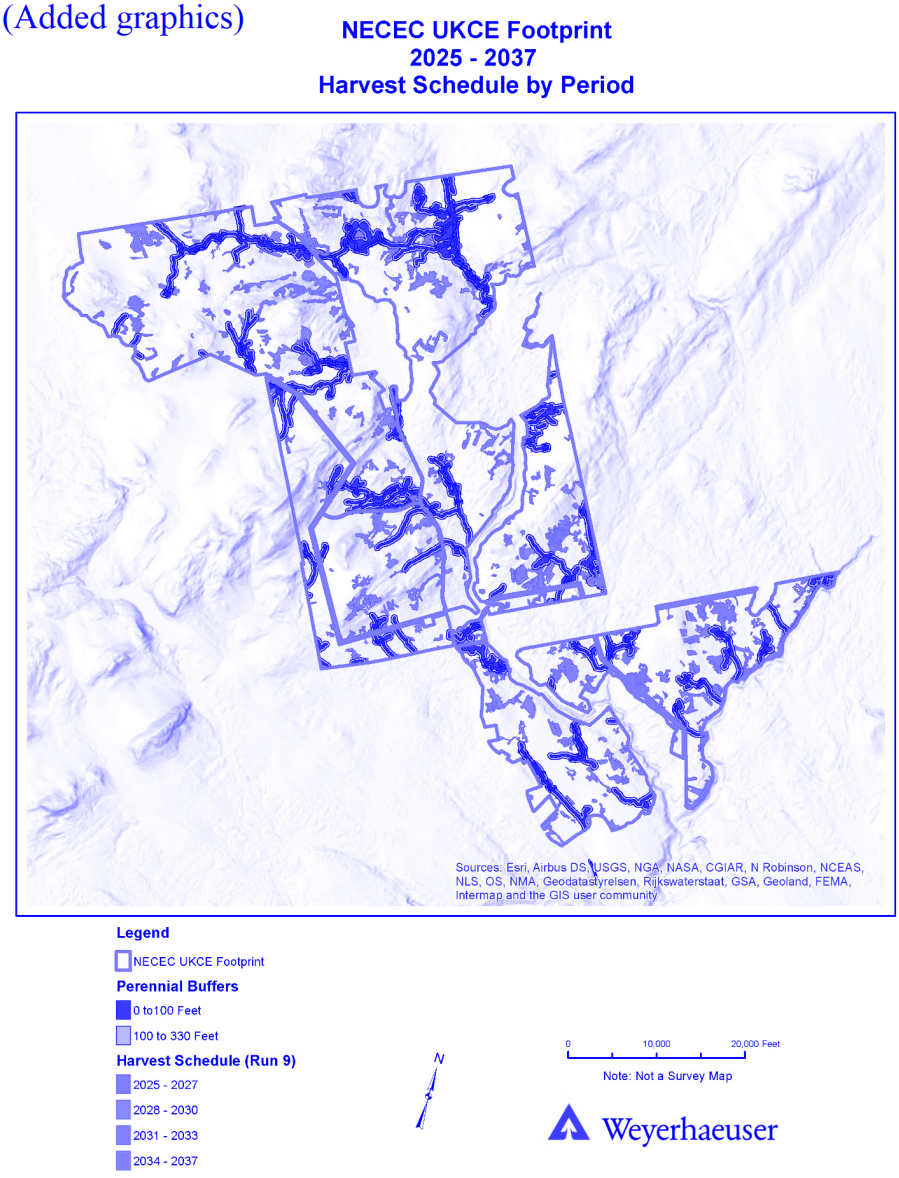


Figure 6. 10-12 Year Potential Harvest Areas for the Protected Property

(Added graphics)



Due to the format of the existing forest inventory data, the current measurement of the mature forest class includes all stands within the 45 to 55-foot majority height strata. This methodology is consistent with the stratification and stand-level estimation procedures described in Section 5.1.

Weyerhaeuser intends to conduct a comprehensive remeasurement of mature forest acreage by the end of 2026. The updated inventory will enable more precise classification of mature forest stands and will inform any necessary revisions to harvest plans to ensure attainment of the first milestone of 20% mature forest by 2035.

Harvest and Road planning on the Protected Property are guided by the principles of shifting mosaic forest management. This approach maintains a dynamic landscape characterized by a diversity of growth stages, age classes, and species composition, thereby promoting habitat connectivity and the development of mature forest blocks. Harvest schedules are developed using stand-level inventory data, remote sensing (LIDAR), and growth models (see Sections 5.3 and 5.4). Even-aged and select harvest regimes are implemented to meet mature forest milestones, with thinning and regeneration practices tailored to site conditions and CE requirements. Harvests are planned to maintain or enhance mature forest habitat, particularly within designated buffers and riparian corridors (see Section 4.3.3).

Road construction and maintenance are conducted in accordance with CE requirements and Best Management Practices (BMPs) to minimize soil erosion, protect water quality, and maintain habitat connectivity (see Section 5.6; Appendix G: BMP Standards). The establishment of new roads or relocation of existing roads requires prior written approval from the Holder, and all activities are supervised by licensed professional foresters. Existing roads within mature buffers are maintained but not expanded without approval, ensuring compliance with CE standards.

All harvest and road planning activities are conducted to meet the requirements outlined in the Conservation Easement, ensuring the perpetual conservation of mature forest habitat and habitat connectivity.

~~4.2~~4.3 Habitat Connectivity

~~4.2.1~~4.3.1 Adjacent Conservation Lands

The Protected Property provides and enhances extensive connectivity to adjacent conservation lands including the 16,934-acre Leuthold Forest Preserve, the 4,790-acre Number Five Bog Conservation Easement, and the 20,000 acre Attean Pond Conservation Easement to the northwest; the 8,150-acre Cold Stream Public Land Unit that lies within the Protected Property running north/south; and the 355,449-acre Moosehead Region Conservation Easement located to

the east and north of the Protected Property which also ties into other conservation areas in the region.

~~4.2.2~~4.3.2 Habitat Connectivity Between Mature Forest Areas

This FMP increases the prevalence of Mature Forest Habitat blocks, which enables greater habitat connectivity within and between mature forest areas. To further illustrate the transition to mature forest, by approximately 2065 the expected acreage contained in stands greater than 200 acres having a height class greater than 35 feet would increase from approximately 16,700 acres under the current management regime to approximately 28,400 acres under the FMP. Similarly, the expected acreage in stands larger than 200-acres with a culminative height class greater than 50-feet would increase from approximately 7,750 acres under the current management regime to approximately 18,600 acres. The exact acreages of forest blocks in these height classes will vary over time.

~~4.2.3~~4.3.3 Riparian Corridors/Buffers

Two levels of buffers will be established along riparian corridors on the Protected Property: "No-Harvest Buffers" and "Mature Forest Habitat Buffers" as defined below. These Perennial Stream Buffers run from the Normal High-Water Line on the approximately 88 miles of Perennial Streams. For Riparian Wetlands, the Normal High-Water Line - marking the start of the buffer - is defined as the upland edge of the wetland, rather than the edge of the open water within the stream corridor. These buffers are designed to ~~improve and~~ maintain and enhance habitat connectivity by creating Mature Forest Habitat along Perennial Streams thereby enhancing connectivity to Mature Forest Habitat elsewhere on the Protected Property.

The map of Perennial Streams found in the Baseline Documentation Report will be used to identify the Perennial Streams that fall under the requirements of this section, subject to a total buffer area acreage cap of 6,898 acres. ~~A map of the approximate location of riparian corridors, with forest management overlay, is included below as **Figure 5**.~~This acreage cap represents the maximum acreage subject to riparian buffer management across the Protected Property. This cap was derived from the spatial analysis conducted during plan development. The purpose of the cap was to provide management certainty recognizing that the Baseline Documentation would not be complete until after FMP development and to avoid acreage discrepancies as streams meander over time. The Perennial Stream ~~Buffers~~buffers that make up this cap area are structured into two zones. Those buffer zones along with the estimated acreage distribution of each will be managed as follows:

- ~~1.~~ **No-Harvest Buffer** (0 - 100 feet above Normal High-Water Line~~ to 100 feet: No-Harvest Buffer~~) – Approx. 2,400 acres

  ~~2. Greater than 100 feet to 330 feet: Mature Forest Habitat Buffer~~

- **Mature Forest Buffer** (100 - 330 feet above the Normal High-Water Line) – Approximately 4,500 acres. Harvesting may occur so long as the stand will continue to meet the Mature Forest Habitat threshold after harvest. See CE Section VII.A.6 regarding the establishment of Mature Forest Buffers.

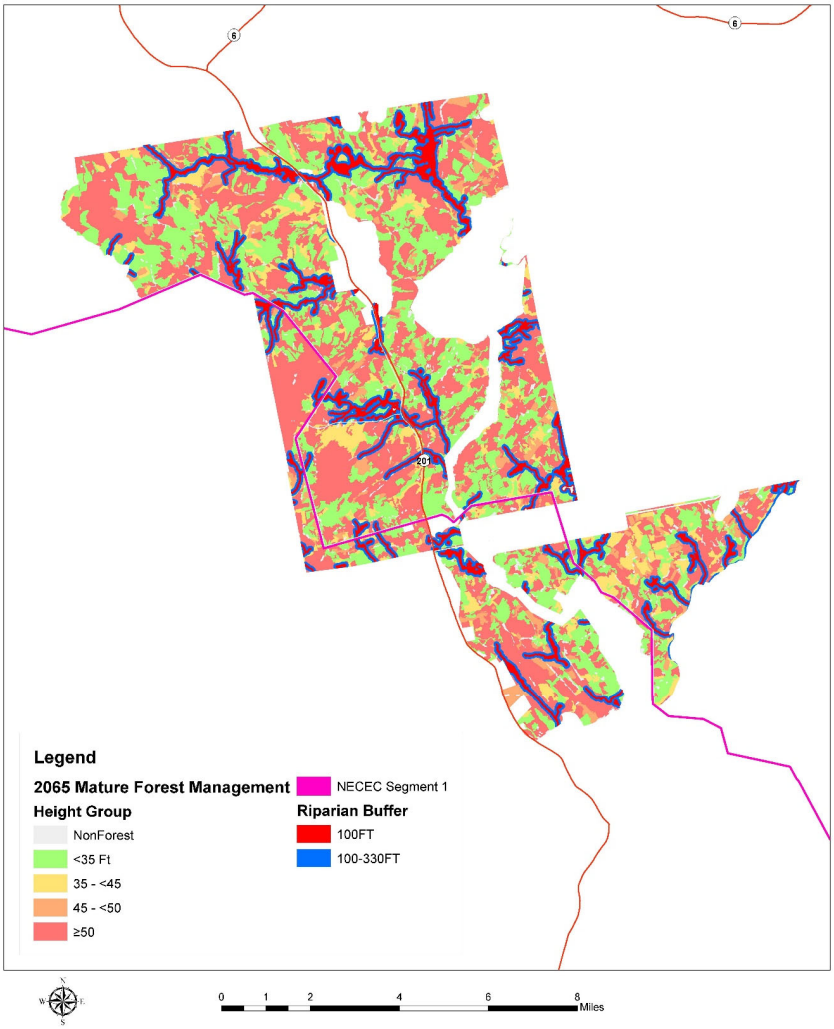
Table 2 below provides a more detailed breakdown of acreage by Covertype within the No-Harvest Buffer, the Mature Forest Buffer and the remaining acreage of the Protected Property.

Table 2. Covertype Acreage within and outside of Buffer Zones

(Added)e	CoverType		100-330FT	100FT	Grand Total
No	NP - Gravel Pit	39	17	1	57
	NP - Large Streams			56	56
	NP - Ledge	15			15
	NP - Open Water, Reservoirs, L	20		52	72
	NP - Swamps, Marshes, Bays	240	12	905	1,157
	NP - Utility ROWs	1			1
	NP - Yards (Internal Woodyards)	827	100	21	948
No Total		**1,142**	**128**	**1,036**	**2,306**
Yes	Aspen	176	21	5	202
	Conifer - Hardwood	7,591	1,090	617	9,298
	Hardwood	7,053	479	233	7,766
	Hardwood - Conifer	8,756	816	453	10,025
	Hardwood Plantation	16			16
	Larch Plantation	221	5	1	227
	Northern Hardwoods	414	2	1	417
	Pine Plantation	1,093	34	6	1,133
	Softwood	13,284	1,871	1,037	16,191
	Spruce Plantation	2,291	126	27	2,444
	Swamp Conifer - not Pine	5	11	9	26
	Tamarack Plantation	10			10
Yes Total		**40,911**	**4,454**	**2,389**	**47,754**
Grand Total		**42,052**	**4,583**	**3,425**	**50,060**

A map of the approximate location of riparian corridors, with forest management overlay, is included below as **Figure 7**.

Figure ~~5~~7. Approximate location of riparian corridors, with forest ~~management~~height overlay.



Harvesting will not be conducted within the No-Harvest Buffer except as ~~needed~~approved for forest health reasons, as addressed in the conservation easement in Section VII.A.6. Land Use in Accordance with a Forest Management Plan, Best Management Practices and Applicable Laws

and Regulations. Harvesting activities can occur in stands within the Mature Forest Habitat Buffers, subject to the conditions set forth in Section ~~4.3~~4.4.

Harvesting equipment crossings of any Perennial Streams will be prohibited except for the construction of a road or skid trail needed to facilitate Forest Management Activities. In these instances, crossings and trails will be minimized and, except during frozen conditions, will utilize panel and/or other crossing structures that span from bank to bank to protect streambank and stream bed integrity.

~~4.3~~4.4 Allowances/Exemptions/Approvals

This section covers activities that are exempted from the restrictions of this FMP either automatically or with approval from the Holder. In the event approval is required, Weyerhaeuser will provide written notice to the Holder. The Holder will have 30 days to review and respond. In the event of a denial by the Holder to move forward with such activities, the response from the Holder should include an explanation of the deficiency. In the event a written response is not received within 30 days, Weyerhaeuser is authorized to move forward as planned. See Section XII. F. Standard for Holder Granting Discretionary Consent and Providing Prior Written Approval in the Conservation Easement.

~~4.3.1~~4.4.1 Mature Forest Buffer Harvest

Harvesting may occur in stands located within the Mature Forest ~~Habitat~~ Buffer as follows: If a stand has met the Mature Forest Habitat threshold ~~(i.e., a minimal basal area of 60 sq. ft. per acre of 50' tall or taller trees)~~, harvesting may occur without prior approval only if the stand will continue to meet the Mature Forest Habitat threshold after harvest. See CE Section VII.A.6 regarding the establishment of Mature Forest Buffers.

Pre-Salvage in No-Harvest Buffers

Other than in the context of crossings described in Section 4.4.4, harvesting within No-Harvest Buffers may only be conducted under specific forest health scenarios, including pre-salvage operations in response to spruce budworm infestation, and requires the following:

- Written approval from the Holder.
- Justification based on forest health risk, such as imminent mortality in balsam fir stands.

This provision is designed to allow targeted intervention where forest health threats may compromise long-term habitat objectives, while maintaining oversight and alignment with conservation goals.

Pre-Salvage Spruce Budworm Risk Analysis Within No-Harvest Buffers

The table below shows the mature spruce/fir softwood stands currently contained within the "No-Harvest Buffers". These stands may be vulnerable to spruce budworm where pre-salvage may need to be considered.

Table 3. Mature Spruce-Fir Softwood Stands within No-Harvest Buffers

(Added)e	StandClassCode	100FT NoHarvest
Softwood	FS2B	11
	FS2C	20
	FS2D	2
	FS3A	22
	FS3B	36
	FS3D	6
	FS4D	4
	S1B	0
	S1C	20
	S1D	12
	S1E	2
	S2A	1
	S2B	235
	S2C	88
	S2D	7
	S3A	229
	S3B	125
	S3C	45
	S3D	37
	S3E	1
	S4A	126
	S4C	7
Softwood Total		**1,037**

Accounting for Pre-Salvage and Mature Forest Targets

All harvesting activities, including pre-salvage, are tracked through the Forest Management System (FMS) and incorporated into annual inventory updates. Specifically:

- Harvested stands are reclassified based on post-harvest conditions.
- Mature forest percentages are recalculated annually using updated stand-level data.

- If pre-salvage activities result in a reduction of mature forest acreage, compensatory adjustments (e.g., deferred harvests elsewhere) may be implemented to maintain progress toward the 2065 milestone of 50% mature forest coverage.

~~4.3.2~~4.4.2 Forest Health

Upon written approval from the Holder, harvesting may be conducted within No-Harvest Buffers following the process described in ~~4.3.3 below to protect the forest resource from~~4.4.1, above. Section 4.4.3 below addresses responding to large-scale forest health threats~~, including intervention strategies such as pre-salvage activities for spruce budworm~~ and impacts.

~~4.3.3~~4.4.3 Disaster / Force Majeure Event

Section VII.A.6 of the Conservation Easement states the following:

> Grantor and the Holder agree that in the event that a hurricane, fire, flood, drought, disease, or forest health pest outbreak causes or substantially contributes to the failure of Grantor to meet the Milestones or Mature Forest Goal ("Force Majeure Event"), then Grantor shall not be found in non-compliance with this Conservation Easement. Following such an event, the Grantor and Holder shall work cooperatively to revise the Forest Management Plan in furtherance of the Conservation Values of this Conservation Easement, which may include deferring further harvests until the Mature Forest Goals are met. Any further harvesting shall require prior written approval of the Holder and give priority to restoring progress towards the Milestones and the Mature Forest Goal.

Section VII.E.1(a) of the Conservation Easement states the following:

> Waiver in Specific Circumstances. Grantor and the Holder agree that in the event of a hurricane, fire, flood, drought, or similar event or if an insect, disease, or forest health pest outbreak occurs and sanitation or salvage harvests are necessary to prevent the outbreak from spreading to adjacent stands then the restrictions in this Section VII.E.1 may be temporarily waived with the prior written approval of the Holder.

~~Subject to applicable law, including emergency final orders issued by government authorities, in the event of a natural disaster, such as a fire, hurricane, drought, disease, insect infestation, or other forest health pest outbreak (each a "Disaster"), it shall be Weyerhaeuser's right to use then-current Silviculture BMPs to respond to the Disaster and to protect the remaining timber resource. In the event of a Disaster, the restrictions imposed under this FMP will be temporarily waived to accommodate the removal of damaged timber. If large-scale salvage harvesting contrary to the provisions of this FMP becomes necessary, written notice shall be promptly given to Holder. Following such a Disaster, Weyerhaeuser will evaluate whether the Disaster causes or~~

~~substantially contributes to the failure of Weyerhaeuser to meet the Milestones or Mature Forest Goal, thereby constituting a Force Majeure Event as set out in the Conservation Easement. See CE Section VII.A.6.~~ If a Force Majeure Event has occurred, Weyerhaeuser will evaluate the need for revisions to the FMP, in cooperation with the Holder, and evaluate deferrals of further harvests until the Mature Forest Goals are met. See CE Section VII.A.6. Any incidence of a ~~Disaster or a~~ Force Majeure Event, including its impacts, scope, and potential long-term management, harvesting, reforestation, and other implications, will be discussed at the upcoming annual meeting.

~~4.3.4~~4.4.4 Other Exceptions

Maintenance and use of established bridges, trails, truck roads, skid trails, landings, and other stream-adjacent infrastructure identified in the Baseline Documentation Report or otherwise constructed in accordance with the Conservation Easement shall be exempt from the Perennial Stream Buffer requirements. Skid trails within the 100 ft. buffer are also exempt in order to facilitate Forest Management Activities provided no reasonable access alternative and provided all applicable BMPs are met. See Section 5.6 for further details regarding road, landings and skid trail maintenance and appropriate references to relevant CE Sections and Baseline Documentation. Maps in **Appendix F** show existing forest management roads and landings on the Protected Property.

New Perennial Stream crossings for roads can only be constructed if they have been described in the previous year's Annual Report or the Grantor has otherwise provided notification to the Holder and received approval from the Holder. For skid trail crossings of Perennial Streams, all planned locations and actual completed crossings from the previous year will be provided to the Holder at the Annual Meeting as outlined in CE Section VII.A.6. For both road and skid trail crossings, all applicable Best Management Practices, including those set forth in **Appendix G** and CE Section VII.A.6, shall be met. Such BMPs include, among other things, elements designed to protect streambank integrity by first minimizing the number of crossings and then selecting the most appropriate crossing locations. After the location of a crossing is determined, a successful crossing must also put plans in place for protecting streambank integrity, maintaining adequate filter strips, stabilizing exposed soils and utilizing adequate sediment barriers to minimize impact from exposed soils.

The Holder may grant approval for crossings of Perennial Streams to facilitate activities other than Forest Management Activities, such as non-intensive outdoor recreational activities.

5.0 Timber Resource Planning Considerations

5.1 Forest Inventory

Across the entire Protected Property, the forest inventory is comprised of two-stage stand level survey where individual stands are sampled to develop stand level estimates. A detailed description of Forest Inventory Procedure and Design is found in **Appendix H**. These stand level estimates are expanded to unsampled stands through a stratification and two-stage estimate procedure using remote sensed LIDAR and high flight imagery. The un-cruised stands' harvest history, covertype, and silviculture history are used in conjunction with the remote sensed data to assign an inventory to un-cruised stands.

The inventory is stored at the stand level. The stand consists of a homogenous covertype, stand class, land use, vegetative class, silviculture history, harvest history, and/or site class. Inventory is adjusted for completed harvest in the Weyerhaeuser Forest Management System (FMS) within 30 days of the completed activity. Final harvests are totally depleted and assigned a reforestation activity. Partial harvest stands are assigned a modeled harvest inventory until the next inventory cycle.

The stand level inventory consists of tree lists with species, product, diameter breast height (dbh) class, basal area, merch height, total height, and trees per acre detail. Each stand will have the gross, productive, and harvestable acres assigned to the stand. Productive acres are determined based on the definition of "Productive Forest Acres" in the Conservation Easement, i.e., any area capable of growing a crop of trees that can reach Mature Forest conditions. See CE Section III.X. Productive areas exclude non-forested acres, such as roads, that intersect the stand. Harvestable acres are a subset of productive acres—they only include the productive acres that can be modeled for harvest, i.e., by excluding any restricted acres for special sites, steep slopes, and/or protected species.

The inventory cycle ensures that cruised stand estimates will be no older than 15 years. This will ensure that any variance in growth and yield estimates that vary from observed estimates are corrected through time. All partially harvested stands will have new sampled estimates assigned prior to any harvest scheduling and/or 10-year FMP update.

The current forest inventory projections are based on a combination of previously sampled stand-level data collected and remote sensing analysis, including 2016 LIDAR canopy height models and NAIP imagery. These inputs were used to stratify and expand estimates across unsampled stands using a two-stage estimation procedure as previously described.

The most recent full inventory effort was conducted in 2019. The current projections reflect updates derived from that dataset, adjusted for harvest activity, growth, post-harvest strata estimates, and young stand strata estimates.

As noted in Section 4.2, a comprehensive remeasurement of the Protected Property will occur by the end of 2026. This effort will focus on updating the entire inventory of the protected property through cruising individual stands in a strata. These individual stand level estimates will be expanded to uncruised stands with the assigned strata based on LIDAR height statistics, past history, and species detail cruising individual stands in a strata. These individual stand-level estimates will be expanded to uncruised stands with the assigned strata based on LIDAR height statistics, past history, and species detail.

The reinventory will follow field sampling procedures as described in **Appendix H**.

~~Field sampling to update the Protected Property inventory will be conducted in 2025. Field sampling, when conducted, consists of variable plots (older stands) and fixed plots (younger stands). Species, dbh class, and tree product are collected on each tree within the plot. Subsamples of total heights are collected within the stand. During compilation these subsampled total heights are regressed to input trees total heights that were not measured. Each tree sampled is expanded based on the plot size and count into productive acres and stored at the stand level.~~

5.2 Inventory Classification System

Each stand has a covertype and stand class assigned to describe the current management, species composition, and the size density class. These classifications are derived from silviculture and harvest history, stand visits/exams, and the inventory.

5.2.1 Covertypes

The covertype of each stand identifies the association of tree species for productive stand types and the vegetative type or land use for nonproductive types. Stands with a “plantation” designation identify types that were artificially regenerated via intentional planting methods. See CE Section III.V. The table (**Table ~~2~~4**) and map (**Figure ~~6~~8**) below show the covertype acreage.

Table ~~2~~4. Covertype Acreage

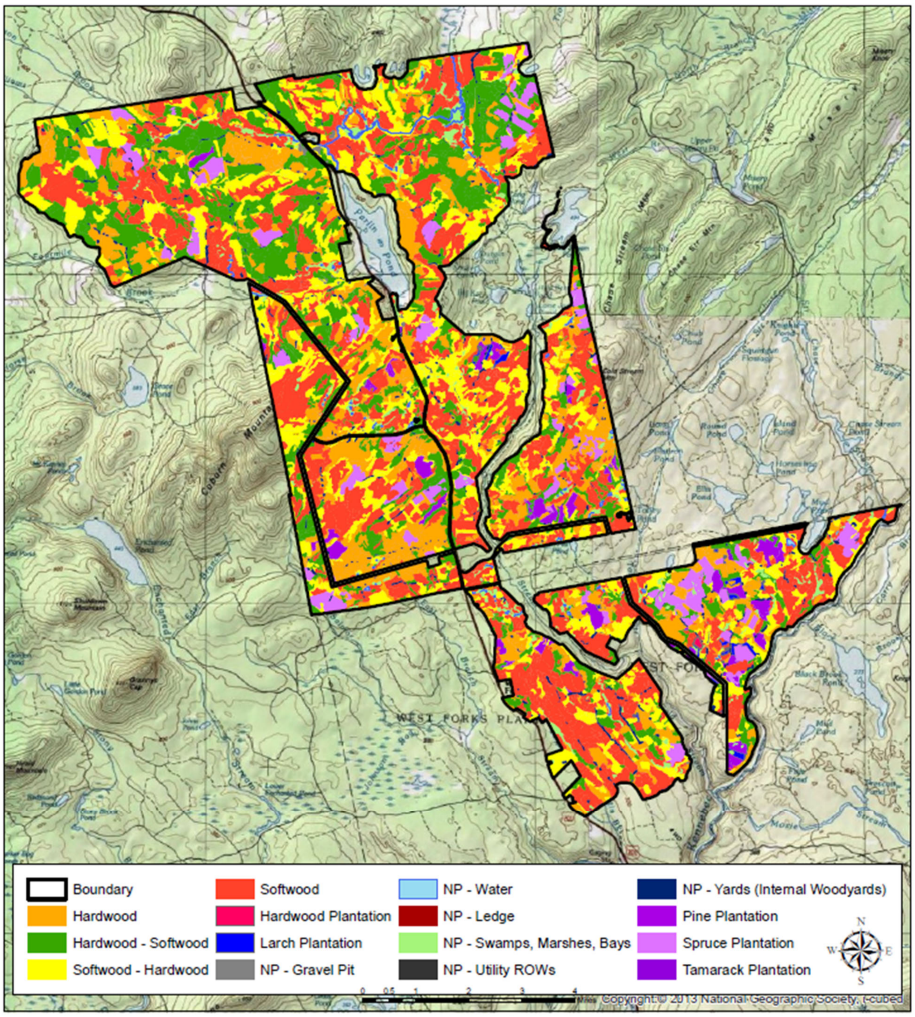
Productive	CoverType	Gross Acres *	Productive Acres **
Yes	Aspen	202	196
	Conifer - Hardwood	9,298	9,102
	Hardwood	7,766	7,558
	Hardwood - Conifer	10,025	9,794
	Hardwood Plantation	16	15
	Larch Plantation	227	221
	Northern Hardwoods	417	403
	Pine Plantation	1,133	1,120
	Softwood	16,191	15,952
	Spruce Plantation	2,444	2,410
	Swamp Conifer - not Pine	26	26
	Tamarack Plantation	10	10
Yes Total		**47,754**	**46,806**
No	NP - Gravel Pit	57	0
	NP - Large Streams	56	0
	NP - Ledge	15	0
	NP - Open Water, Reservoirs, L	72	0
	NP - Swamps, Marshes, Bays	1,157	0
	NP - Utility ROWs	1	0
	NP - Yards (Internal Woodyards) ***	948	0
No Total		**2,306**	**0**
Grand Total		**50,060**	**46,806**

* Gross Acres = GIS Acres

** Productive Acres = Gross Acres net of any nonforest inclusions on road ROWs

*** NP - Yards (Internal Woodyards) = log landings used for harvest operations

Figure ~~6~~8 - Covertype Map


Boundary
Hardwood
Hardwood - Softwood
Softwood - Hardwood
Softwood
Hardwood Plantation
Larch Plantation
NP - Gravel Pit
NP - Water
NP - Ledge
NP - Swamps, Marshes, Bays
NP - Utility ROWs
NP - Yards (Internal Woodyards)
Pine Plantation
Spruce Plantation
Tamarack Plantation
N
W
E
S
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5.2.2 Stand Class

Each productive stand has an assigned stand class that further defines the standing inventory based on the size, density, and species composition. The size class (numeric code) of the stand defines the development class or product class within the stand. The density class (alpha code) defines the stocking within the stand, by trees per acre for younger stands and basal area in older stands. The species code further refines the species within the stand. The tables below define the classification system. For example: A Northern Hardwood H4A is a Northern Hardwood sawtimber stand of high density.

Table ~~3~~5. Stand Class Description

Covertype	Stand Class Spp	Description
Aspen	I	Aspen, Balm
Hardwood	I	Birch
	H	Mixed Hdwd
Northern Hardwoods	H	Northern Hardwood (Yellow Birch, Sugar Maple)
Pine	JP	Natural Jack Pine
	RP	Natural Red Pine
	WP	Natural White Pine
Pine Plantation	JP	Plantation Jack Pine
	RP	Plantation Red Pine
	WP	Plantation White Pine
Swamp Conifer - not Pine	S	Lowland Mixed Softwood
	T	Tamarack
	C	Northern White Cedar
	BS	Black Spruce
	Hem	Hemlock
Softwood	S	Upland Mixed Softwood
	FS	Fir Spruce PCT (PCT or release)
	Hem	Upland Hemlock
Hardwood - Conifer	HS	Mixedwood Hardwood Dominated
Conifer - Hardwood	SH	Mixedwood Softwood Dominated
Hardwood Plantation	I	Hybrid Aspen
Spruce Plantation	BS	Black Spruce Plantation
	NS	Norway Spruce Plantation
	RS	Red Spruce Plantation
	WS	White Spruce Plantation
Larch Plantation	L	Larch Plantation
Tamarack Plantation	T	Tamarack Plantation

Density Code	1 & 2 Size (TPA)	3 & 4 Size (Merch Basal Area)
A	>3,000 (>1000 Plnt)	>120 SqFt
B	>1500 (>700 Plnt)	>90 SqFt
C	>700 (>400 Plnt)	>60 SqFt
D	>400 (>250 Plnt)	>30 SqFt
E	NA	>10 SqFt

Size Code	Size Description	Based On TPA & BA
1	Seedlings	< 67% of stems have a dbh >.5" (default < 15 years of age)
2	Saplings	>67% of stems have a dbh >.5" & <67% of BA Merch
3	Pulpwood	>67% of BA Merch
4	Sawtimber	>9.0" Merch QMD or Sawtimber >67% Basal Area Softwood Covertypes or>33% Basal Area All Other

5.2.3 Size Class

Size Class is a numeric code used to define the development stage or product class of a forest stand. Size class reflects the dominant tree size within a stand, typically based upon dbh and height metrics. It helps to categorize stands into growth stages such as seedling, sapling, pole timber or sawtimber based upon tree size.

When considering Size Class as it relates to Mature Forest designation, generally Size Classes 3 and 4 are considered, however not entirely. For example, Size Class 4 generally represents stands that meet the mature forest definition. However, not all stands in Size Class 4 automatically qualify as mature forests. For example, stands in Size Class 4 that have lower stocking densities—such as those classified in stocking class E—do not meet the mature forest threshold for basal area and are therefore not counted toward mature forest milestones. Only those Size Class 4 stands that meet both the height and stocking requirements are included in mature forest calculations.

Similarly, most stands contained within Size Class 3 currently do not meet the mature forest definition. However, some stands contained within the upper end of this size class, such as those classified as 3A, may meet mature forest definitions.

5.3 Mature Forest, Growth & Yield, Future Planning

Mature Forest:

At a minimum, Commercial Forest Management Activities must result in 50% of the Productive Forest Acres with ~~50 foot or taller trees consisting of a mix of native species with a minimum~~a basal area of ~~60~~80 square feet per acre of live trees at least 4.5 inches diameter breast height, of which 60 square feet per acre must be at least 50 feet tall, accompanied by representative levels of well distributed standing dead and downed trees where present prior to management activity no later than December 31, 2065, and thereafter in perpetuity (the "Mature Forest Goal").

The current mature forest percentage on the Protected Property is derived from existing stand level and two stage estimates as described above in ongoing inventory maintenance and growth. These estimates were derived from stands sampled and classified by LIDAR canopy height models. All in-progress and prescribed 2025 harvests have been accounted for.

The current mature forest percentage is a sum of all stands' productive acres that meet the mature forest definition divided by the total productive acres in the Protected Property. Only trees equal to or greater than 50' tall can contribute to the basal area required to meet the mature definition. The stand must have at least 60 square feet of basal area of 50 foot tall or taller trees for its productive acres to qualify as mature. The mature forest percentages will be updated each year based on the most current inventory.

Growth & Yield:

Annual growth is performed by using the Northeast Variant of the Forest Vegetation Simulator (NE FVS) growth model provided by the United States Forest Service Department of Agriculture. The NE FVS is calibrated for local conditions using Weyerhaeuser's proprietary methodology. These calibrations are derived from analysis with local Forest Inventory and Analysis (FIA) plot data.

Annual growth is performed at the stand level derived from periodic point in time sampling procedures. If stands have been partially harvested since the last point in time inventory, the inventory data used in growth are from forester thinning model estimates.

Each stand uses tree lists derived from the point in time inventories or thinning model estimates and are grown forward for the appropriate number of years since the inventory took place.

To clarify the specific modeling inputs:

Measured Height Data: Measured tree height data was not used directly in the calibration of the NE FVS model. Instead, subsampled total heights collected during field sampling are used to develop regression models at the stand species and dbh class level. These regressions are then applied to estimate total tree heights across the landscape.

Site Quality Assumptions and Soils Data: Site quality was derived from the NRCS soils series data mapped to the Briggs estimated SI50 site class for natural unmanaged spruce fir. This was done through Plum Creek's Soils Management Group mapping procedure. Further refinements were made for stands with chemical treatments and plantations with well-known ages and heights.

Forest Health and Climate Uncertainty: The current modeling framework does not explicitly incorporate uncertainty related to forest health threats (e.g., insect/disease outbreaks) or climate change impacts as these factors are not embedded within accepted models, including the NE FVS, at this time. The upper limit of density related mortality in FVS was changed from 85 percent to 75 percent to better represent an empirical endemic condition as proposed by Vandendriesche, Don. 2010[3]. This change was made to better reflect endemic conditions encountered in a forest landscape rather than theoretical optimal condition. Adaptive management strategies will be considered as part of future updates to the FMP and annual progress reporting. The modeling does account for natural mortality that occurs through stem exclusion of forest stand development.

[3] Vandendriesche, Don. 2010. FVS out of the box - assembly required. In: Jain, Theresa B.; Graham, Russell T.; Sandquist, Jonathan. Integrated management of carbon sequestration and biomass utilization opportunities in a changing climate: Proceedings of the 2009 National Silviculture Workshop; 2009 June 15-18; Boise, ID. Proceedings RMRS-P-61. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. p. 289-306.

Future Planning:

As noted previously, progress toward the Mature Forest Goal will be made at the following "Milestone" rates:

Mature Forest Milestones	
2025	13%
2035	20%
2045	30%
2055	40%
2065	50%

The rate or percentage of mature forest is calculated by dividing the productive stand acres that meet the mature forest definition by total productive stand acres within the Protected Property. However, although existing Plantations may count toward the Mature Forest Goal, any new Plantations created after the date of this FMP may not. See CE Section VII.E.1. Accordingly, when any new Plantations grow into mature forest, they will be excluded from calculations of productive stand acres meeting the mature forest definition.

Progress toward reaching the Milestones and Mature Forest Goal will be provided to Grantor in annual progress reports. Each year the inventory will be grown forward in time and all harvest will be depleted from the inventory prior to the annual progress report.

The inventory procedure above provides the framework to annually track the Mature Forest Milestones at each annual progress report. Each stand's covertype, stand class, productive acres, and mature forest basal area (trees >50 ft tall) will be provided in the annual progress report. This annual reporting will guide future harvest planning to meet the Mature Forest Milestones at each 10-year FMP update. See CE Section VII.6(a), (d).

Regular harvest scheduling will be conducted at a minimum of every 10 years to project harvest levels. The harvest schedule will be a guide to ensure Mature Forest Milestones are met and not to be used as an absolute annually, to ensure there is flexibility for weather, forest product markets, logger capacity, and other harvest related considerations. The Woodstock Optimization Studio, a Remsoft product, will be used to conduct the harvest scheduling procedures. Woodstock is a purpose-built and highly adaptable optimization model for end-to-end forestry planning and scheduling activities.

5.4 Silvicultural ~~Recommendations~~Considerations

Silviculture prescriptions selected at the stand level across the Protected Property will be the responsibility of Maine licensed professional foresters and are subject to the unique characteristics of each stand and unforeseen future conditions. In general, management within the Protected Property will be primarily even-aged regimes outside mature riparian corridors, other state mandated riparian areas, and other special designated areas. Management in all areas of the Protected Property will ensure that the Mature Forest Milestones are met.

Rotation lengths will be dictated by site index, covertype, markets, and the Mature Forest Milestones. Harvest schedules will be run periodically to ensure the footprint is meeting the mature forest milestones and other requirements for the Protected Property.

Even-aged thinning regimes will be implemented in plantation covertypes and natural softwood covertypes to develop product classes of higher and better value where the individual stand dynamics warrant. Stands that are thinned may only be counted toward the Mature Forest Milestones if the residual stand post-thinning continues to meet or exceed the mature forest description.

Within the Mature Forest Habitat Buffers, other state mandated riparian areas, and other special designated areas, a select harvest regime will be implemented. Tree removal will consider tree species longevity, wildlife value, and Mature Forest Milestones. These select harvest regimes will ensure the residual stand condition either meets the mature forest designation at time of harvest or does not impair the stand from meeting the mature forest requirements.

Planting can be implemented within the guides of not exceeding the max plantations allowed by the CE for the Protected Property.

Mixed-Wood Stand Characterization (Beech and Balsam Fir Components)

As noted in Section 3.1, mixed-wood stands comprise approximately 40% of the forested acreage on the Protected Property. These stands are composed of a combination of coniferous and deciduous species, with balsam fir and American beech representing material components within their respective strata. The table below shows the actual components of beech and fir.

Table 6. American Beech and Balsam Fir Tons per Mixedwood Stands

(Added)

		Total Tons			
CoverType	Species	Outside Riparian Zones	100-330FT Riparian	100FT NoHarvest	Grand Total
Conifer - Hardwood	Balsam Fir	62,778	9,146	6,751	78,675
	Beech	2,605	433	291	3,329
	Other Species	165,387	30,260	24,518	220,165
Conifer - Hardwood Total		**230,770**	**39,838**	**31,560**	**302,169**
Hardwood - Conifer	Balsam Fir	33,008	3,448	2,530	38,985
	Beech	16,323	1,803	1,267	19,393
	Other Species	188,343	23,078	18,942	230,363
Hardwood - Conifer Total		**237,673**	**28,330**	**22,739**	**288,742**
Grand Total		**468,443**	**68,168**	**54,300**	**590,911**

Balsam Fir Component

As shown in the Table above, Balsam fir is a dominant softwood species within many mixed-wood stands and is susceptible to spruce budworm. The Forest Health section (3.2) outlines that balsam fir is actively monitored and managed under the statewide Spruce Budworm mitigation strategy, which includes L2 larval surveys, hotspot identification, and risk-based silvicultural planning.

Beech Component

American beech is also present in the hardwood fraction of mixed-wood stands and is increasingly impacted by Beech Leaf Disease (BLD), which has been confirmed in southern Somerset County. While no detections have yet occurred on the Protected Property, it is expected within the next few years. Beech is generally retained where healthy, but its long-term viability is being evaluated due to disease pressure. Future silvicultural prescriptions may shift toward promoting more resilient hardwood species in affected areas as the science on BLD management improves in the future.

Overall Stand Quality

Currently, overall stand quality across the Protected Property is assessed as good to very good, with many younger stands exhibiting strong vigor and healthy development. Stand health and structural conditions will continue to be monitored through routine field assessments and inventory updates. As conditions evolve, management strategies will be adjusted in coordination with the Holder to ensure continued progress toward the Mature Forest milestones required under the Conservation Easement.

Pre-Harvest Planning and Prescription Identification

Pre-harvest planning is a critical step to ensure that harvest activities align with both regulatory requirements and long-term conservation goals. The process includes:

- **Stand Assessment:** Each stand is evaluated using up-to-date inventory data, including basal area, species composition, and size class distribution. This assessment identifies stands for candidates for Overstory Removal (OSR), Clearcut (CC), or thinning treatments.
- **Prescription Development:** The Silvi-Key flowchart, referenced below, is used to help determine the appropriate harvest prescription. For example, stands exceeding 450 TPA (trees per acre) of quality regeneration may be scheduled for OSR. Stands not meeting these thresholds may be deferred for future treatment.
- **Silviculture Key:** The Silviculture Key is a proprietary tool developed using the latest science available for the Acadian Forests of the Northeast. This tool provides structured guidance for developing harvest prescriptions and planning silvicultural treatments across different stand types. The key is used in conjunction with shifting mosaic management strategies and ensures that, by 2065, at least 50% of productive acres meet and maintain the mature forest conditions as required by the Conservation Easement.
- **Regulatory Compliance:** All harvest plans are developed or reviewed by a licensed forester, and clearcut prescriptions over 75 acres require submission to the Maine Forest Service for approval. Regeneration requirements and separation zones are strictly observed.

B-line Thinning and Residual Stand Status

B-line thinning is utilized as an intermediate silvicultural treatment in stands that do not meet the criteria for overstory removal or clearcutting. The objective of B-line thinning is to improve stand structure and promote further development of quality regeneration and residual crop trees while maintaining or progressing toward the mature forest conditions required by the Conservation Easement.

A residual stand following B-line thinning will only be classified as “mature forest” if it meets the following criteria:

- **Basal Area:** At least 60 square feet per acre of live trees that are 50 feet or taller and at least 80 square feet per acre total of live stems greater than 4.5 inches dbh (for productive acres).

If, after thinning, the residual stand does not meet these thresholds, it does not qualify as mature forest. This approach ensures that all silvicultural thinnings are aligned with the long-term goal of

achieving and maintaining mature forest conditions across at least 50% of productive acres by 2065, as stipulated in the Conservation Easement.

Quality Regeneration and Overstory Removal

Overstory removal is only prescribed when there is sufficient quality regeneration established in the understory. The standard for "quality regeneration" is defined as:

- **>450 trees per acre (TPA)** of vigorous, desirable species (including maple, birch, oak, ash, aspen, spruce, and fir).

Prior to overstory removal, stands are assessed to confirm that this regeneration threshold is met. If the threshold is not achieved, the stand is either deferred for further development or managed with additional treatments to encourage regeneration.

Clearcut Regeneration Standards

Clearcutting is subject to strict regeneration requirements:

- **Regeneration Monitoring:** All clearcut areas must be regenerated to a new stand of trees that meets specific density and height requirements within five years, in accordance with the Maine Forest Practices Act.
- **Intervention Measures:** If natural regeneration is insufficient, site preparation (including herbicide application or planting) may be employed on a case-by-case basis to ensure successful establishment of the next forest cohort.
- **Documentation and Reporting:** Foresters monitor and document regeneration progress, and interventions are planned if stocking or species composition is inadequate. Results are shared with the Holder and relevant agencies during annual meetings.

Harvest Plan Elements

The following is an example of a harvest plan, illustrating the standard elements and considerations included in operational planning for timber harvests conducted on the Protected Property. The example is intended to demonstrate how site-specific information, silvicultural objectives, environmental safeguards, and operational details are integrated to ensure compliance with regulatory requirements and best management practices. Those elements are as follows:

Township: [Insert Township Name]

Notification Number: [Insert FON]

Forester: [Insert Forester Name & License]

Logging Contractor: [Insert Contractor Name]

Harvest Prescription Determined by Silviculture Key: [e.g., Clear Cut with Residuals, Selection Harvest, Patch Cut]

Silviculture Key:

The Silviculture Key is a tool developed using the latest science available for the Acadian Forests of the Northeast. This tool provides structured guidance for developing harvest prescriptions and planning silvicultural treatments across different stand types. The key is used in conjunction with shifting mosaic management strategies and ensures that, by 2065, at least 50% of productive acres meet and maintain the mature forest conditions as required by the Conservation Easement.

Logging Method: [e.g., Mechanized – Tree Length, Hand Crew, Processor/Forwarder]

Estimated Acres: [Insert Number of Acres]

Soils: [e.g., Well Drained, Poorly Drained]

Slope Class: [e.g., Gentle Slope (0–8%), Steep (16–35%)]

Operability: [e.g., Summer, Winter, All Season]

Roads: [e.g., Flagged, Permit Approved]

Property Boundary: [e.g., NA, Blazed & Flagged]

Silviculture Objective: [e.g., Natural Softwood Regeneration]

Harvest Type: [e.g., Clear Cut, Thinning, Overstory Removal]

Supervision: [Insert Supervisor Name]

Environmental and Safety Considerations:

- Implement all BMPs (see BMP manual)
- Retain scattered dead & live trees within block
- Protect unique habitats and water quality as identified
- Pre-site safety assessment completed

5.5 Best Management Practices

All Forest Management Activities on the Protected Property are performed in accordance with scientifically developed Best Management Practices that protect water quality by minimizing soil erosion. All Forest Management Activities occurring on the Protected Property will be supervised by a Maine licensed professional forester.

Applicable Best Management Practices and Statewide Standards for Timber Harvesting and Related Activities in Shoreland Zones are attached hereto as **Appendices G and ~~H~~I**, respectively. These BMPs, as may be updated, revised, or replaced over time, will be followed under this FMP.

Such Best Management Practices will be supplemented by the requirements of this FMP to achieve and retain Mature Forest Habitat and Perennial Stream Buffers as outlined in Section VII.A.6 of the CE.

5.6 Road Maintenance and Construction

Grantor reserves the right to construct, install, maintain, and relocate land management roads, including culverts, bridges, other similar drainage and support structures and erosion control devices, winter haul roads, gates, skid trails and skid roads, timber landing areas, and equipment and vehicle parking areas, associated with Grantor's reserved rights, including to support Forest Management Activities and Non-Intensive Outdoor Recreation on the Protected Property; provided that any such roads, parking areas, and water crossings shall abide by applicable local, state, and federal laws and regulations. The establishment of any new land management roads or the relocation of existing land management roads requires prior written approval from Holder.

Grantor reserves the right to maintain and use all pre-existing roads and landings contained within the Perennial Stream Buffer for future Forest Management Activities as reviewed and documented in the Baseline Documentation Report. Existing roads or landings contained within the Perennial Stream Buffers cannot be expanded unless prior written approval is obtained from the Holder.

Construction or relocation of new roads requires prior approval from Holder, including as may be addressed in a previous Annual Meeting, provided that winter haul roads only require prior approval by Holder if they cross Perennial Streams. See CE Section VII C.4; CE Section VII D.2; CE Section VII.A.6. Routine maintenance, repair, and replacement of roads or bridges does not require notice or approval by Holder.

Regardless of whether notice and/or approval by Holder is required, all road maintenance and construction activities will adhere to Best Management Practices that protect water quality by minimizing soil erosion and will be supervised by a licensed professional forester. These BMPs, as may updated, revised, or replaced over time, will be followed under this FMP.

5.7 Access

Motorized Public Access On and Across the Property:

The Protected Property contains 39.8 miles of permanent road access through and across the Protected Property on 18 rights of way to ensure access to the Cold Stream Forest detailed in **Appendix ~~I~~J**. In addition, State Route 201, also known as Old Canada National Scenic Byway, travels north and south through the center of the Protected Property. No changes to existing motorized access are required under the Conservation Easement or addressed in this FMP.

Non-Motorized Public Access On and Across the Protected Property.

The Conservation Easement grants the public with non-motorized access on and across the Protected Property for Non-Intensive Outdoor Recreation and prohibits Grantor from discouraging such access. See CE Section VII.F. However, Grantor retains the right to establish reasonable rules and regulations governing such non-motorized access, such as regulating noise, fires, camping, etc. Examples of such presumptively reasonable rules and regulations are set out in Section VII.F.3 of the Conservation Easement. Moreover, Grantor retains the right to temporarily restrict public access by closing access points, trails, or roads as necessary for safety, ecological, or other specified reasons. See CE Section VII.F.3. Before such restrictions are imposed, consideration must be made regarding the nature of the access being restricted, and the duration and reason for the restriction. Based on the above considerations, prompt written notice to Holder may be required. See CE Section VII.F.3.

Existing recreational trails, such as ATV, hiking, and snowmobile trails, are set out in the Baseline Documentation. The Conservation Easement allows but does not require Grantor to either establish and maintain, or allow others to establish and maintain, these or any additional unpaved trails, provided that any new trail work is done with Holder's approval and in accordance with BMPs.

6.0 Non-Timber Resource Planning Considerations

This section describes the non-timber resource planning considerations, including those set out in Section VII.A.6(b) of the Conservation Easement, after consultation with the Maine Department Inland Fisheries and Wildlife (MDIFW) and the Maine Natural Areas Program (MNAP).

6.1 IF&W and MNAP Stakeholder Consultation

As required in Section VII.A.6(b)(iii), (v) of the Conservation Easement, the Grantor and Holder held a Stakeholder Consultation Meeting on March 1, 2025 with MDIFW and MNAP personnel in order to identify the Confirmed or Potential Endangered, Threatened and Special Concern Species as well as any Rare Plant Populations or Rare or Exemplary Natural Communities found on the Protected Property as of the date of this FMP. In addition, information regarding Essential Habitat, Significant Wildlife Habitat and Aquatic Resources was provided. The Grantor recognizes the importance of considering these species, populations and communities and of working to ensure the habitats that they rely on are maintained or enhanced and that forest management activities do not adversely impact these important ecologies.

6.2 Rare, Threatened, Endangered Plant ~~and~~& Animal Species of Special Concern

All Forest Management Activities will be conducted in a manner that is consistent with the following guidelines, standards and practices. Following is a description of the known or likely presence of state and/or federal threatened or endangered plant and animal species, and rare and exemplary natural communities, developed in Consultation with IF&W and MNAP agencies and personnel. Maps are produced from data layers provided by Inland Fisheries and Wildlife as well as Maine Natural Areas Program.

6.2.1 Confirmed Endangered, Threatened and Special Concern Species

The following Endangered, Threatened and Special Concern Species and exemplary natural communities have been documented on the Protected Property.

Bicknell's Thrush (State Threatened)

1. **Introduction**

Bicknell's Thrush is a rare and range-restricted migratory songbird that breeds in high-elevation coniferous forests in the northeastern United States and eastern Canada. In Maine, its breeding habitat is primarily found in subalpine fir-dominated forests and occurs locally along the Coburn Mountain Range. Habitat is usually dominated by balsam fir (>30%) where a history of disturbance has resulted in stunted dense understory, usually at elevations >2,500 feet. A map of the habitat with confirmed observations of Bicknell's Thrush on the Protected Property is shown in **Figure ~~7~~9** below. Special management guidelines should be implemented in these areas, as follows:

2. **Habitat Description**

Preferred Breeding Habitat:

- Elevation: Typically >2,500 feet on suitable north-facing slopes.
- Forest Type: Dense, stunted balsam fir and red spruce forests, with dense understory.
- Stand Structure: Multi-aged, regenerating stands with high stem density of trees 6 to 26 feet tall with diameters of ≥4 inches dbh. These characteristics would be found in S1, S2, SH1 & SH2 stands withing the Protected Area.
- Canopy: Partially open to closed, with abundant cover and horizontal structure.
- Key Features: Moist soils, mossy ground cover, minimal human disturbance.

3. **Management Objectives**

- Maintain and enhance suitable breeding habitat for Bicknell's Thrush.
- Minimize fragmentation and edge effects in high-elevation forests.
- Coordinate silvicultural practices with breeding season to reduce disturbance.
- Promote natural regeneration of balsam fir and spruce species.
- Retain ~~native-fruit~~native fruit bearing shrubs and trees, such as Mountain Ash.

4. **Management Guidelines**

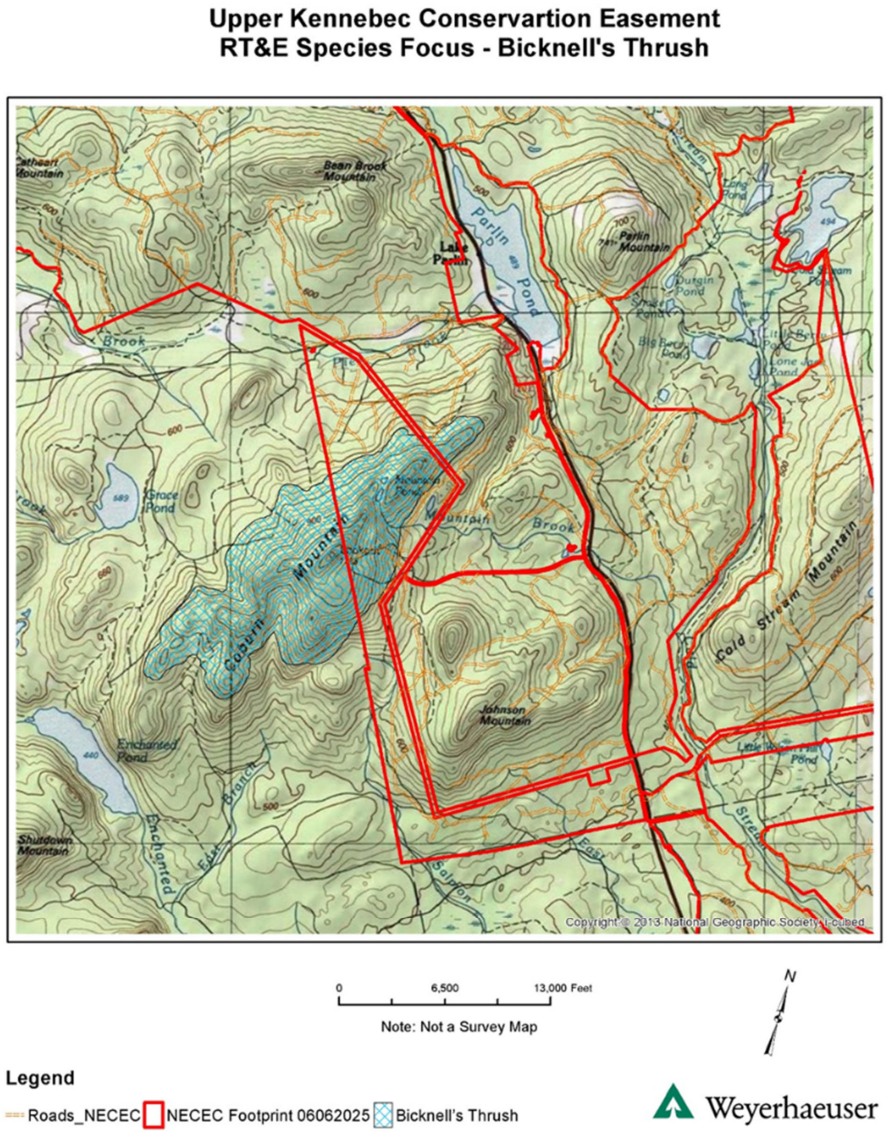
4.1. Silvicultural Practices

- Retain patches of dense regeneration within managed areas.

4.2. Seasonal Timing Restrictions

- Avoid mechanical operations (e.g., harvesting, road construction) in mapped area shown in Figure ~~7~~9 within stands that meet breeding habitat definition (see Stand Structure above) during the nesting season: May 1 – July 31.

Figure ~~7~~9. Map of Documented Occurrence of Bicknell's Thrush on Protected Property.



Rusty Blackbird (State Special Concern)

1. **Introduction**

The Rusty Blackbird is a medium-sized songbird associated with boreal wetlands, forested swamps, and riparian corridors. Most of the wetlands utilized by this species are within the Mature Forest Habitat areas on the Protected Property. Once considered common, its population has declined by over 85% since the mid-20th century. This bird is represented by less than 50 current occurrences throughout the State of Maine and occurs at several locations on the Protected Property, as depicted in **Figure ~~8~~10**. Special management guidelines should be implemented in these areas, as outlined below.

Maine represents the southern edge of its core breeding range where these birds breed in dense, young or stunted northern softwood and mixedwood forests, especially those with standing water, alder thickets, and sphagnum bogs. Habitat loss, predation, wetland degradation, and climate change are major threats.

Softwood silviculture also creates habitat around wetlands where suitable nesting and foraging habitat does not occur within the wetland by promoting portions of stands with young spruce-fir trees <= 10 feet tall and <= 2 inches in diameter. Promoting stand characteristics like this between wetlands and uplands is beneficial for this species.

Breeding individuals are known to abandon their nests because of predators, primarily red squirrels, or human disturbance. MDIFW recommends at least a 100-foot no cut riparian buffer around wetland complexes known to host Rusty Blackbird populations on the Protected Property. There are four such known complexes, all of which should have a 100-foot no harvest buffer within the Perennial Stream No-Harvest Buffer.

2. **Habitat Description**

Preferred Breeding Habitat:

- Dominated by black spruce, balsam fir, tamarack, and northern white cedar.
- Wetlands such as beaver ponds, flooded swamps, peatlands, and slow-moving streams, and their associated riparian areas.
- Presence of standing deadwood, downed woody debris, and shrubby understory (e.g., alder and willow).
- Low to moderate canopy cover (30–70%) near water sources.

Key Habitat Indicators**:**

- Sphagnum moss and moist, mossy forest floor.
- Proximity to shallow, stagnant or slow-moving water bodies.
- Isolated, low-elevation wetlands or drainages within forests.

3. **Management Objectives**

- Maintain and enhance breeding and foraging habitat for Rusty Blackbird.
- Retain hydrologic function and integrity of forested wetland complexes.
- Coordinate forest management and road building activities to minimize disturbance during the breeding season.

4. **Management Guidelines**

4.1. Silvicultural Practices

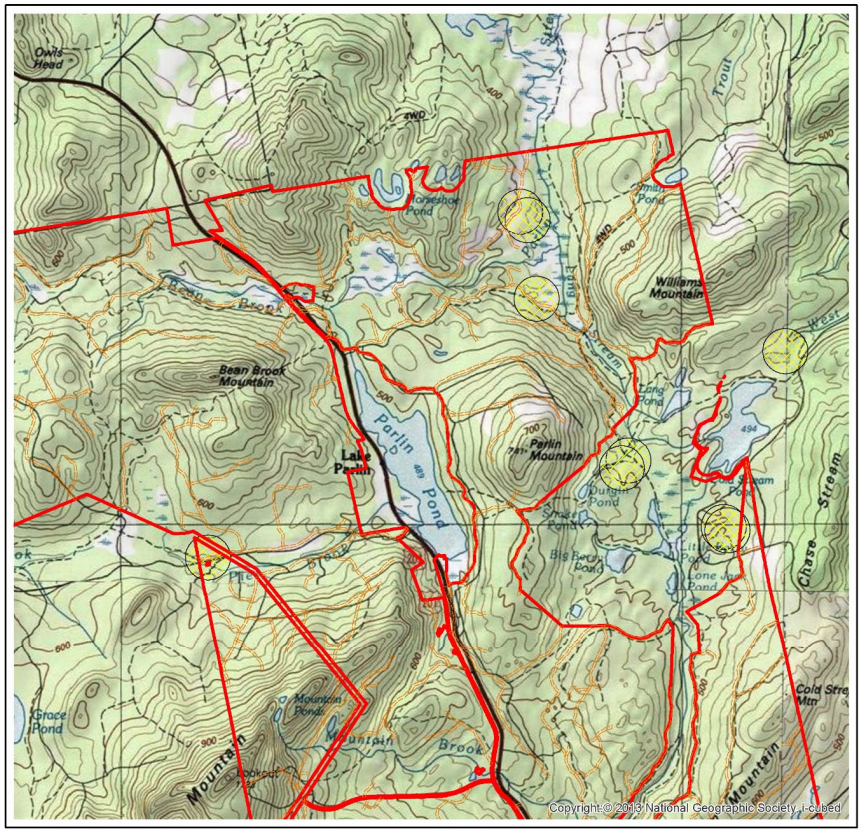
- Softwood silviculture can create habitat around wetlands where suitable nesting habitat does not occur.
- When stand is suitable for nesting, leaving scattered trees (snags and live trees) in softwood stands to serve as territorial perch trees.
- Maintain and protect existing wetland and riparian habitats with at least a 100' no-harvest buffer on wetland complexes confirmed, and shown in Figure ~~8~~10, to host Rusty Blackbird.

4.2. Seasonal Timing Restrictions

- Minimize disturbance from mechanical operations (e.g., harvesting, road construction) around occupied breeding habitat during the breeding season: May 1 – June 30.

Figure ~~8~~10. Maps of Documented Occurrence of Rusty Blackbird on Protected Property.

Upper Kennebec Conservartion Easement
RT&E Species Focus - Rusty Blackbird (Northern Half)



0 6,000 12,000 Feet

Note: Not a Survey Map

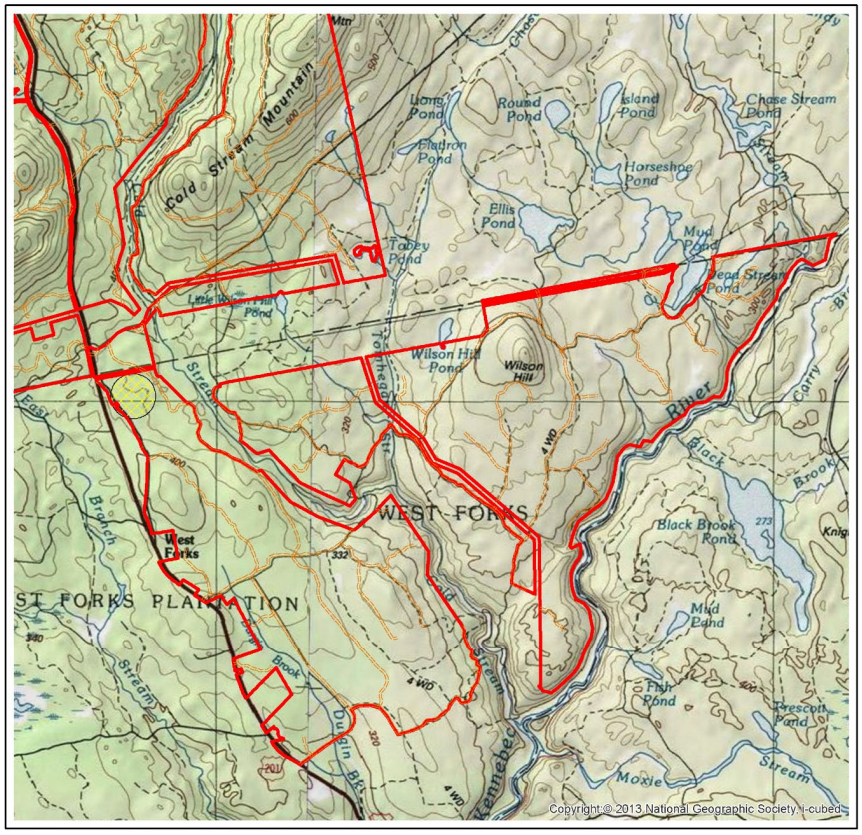
N

Legend

Roads_NECEC NECEC Footprint 06062025 Rusty Blackbird

Weyerhaeuser

Upper Kennebec Conservartion Easement
RT&E Species Focus - Rusty Blackbird Southern Half)



0 6,000 12,000 Feet

Note: Not a Survey Map

N

Legend

Roads_NECEC NECEC Footprint 06062025 Rusty Blackbird

Weyerhaeuser

Roaring Brook Mayfly (State Threatened)

1. **Introduction**

The Roaring Brook Mayfly is an aquatic insect restricted to cold, high-elevation stream systems in northeastern hardwood-conifer forests. The larval stages are fully aquatic and rely on high water quality, stable streambed substrates, and well-shaded riparian corridors. Population declines may be associated with riparian disturbance particularly causing sedimentation, forest road construction, and increased stream temperatures. It is currently known only at 14 sites in Maine's central and western mountains. Maine occurrences are all above 1200 feet elevation and bordered by intact deciduous or mixed forest. The Roaring Brook Mayfly has one known incidence of occurrence on the Protected Property – See Map in **Figure ~~9~~11**. Special management guidelines should be implemented in these areas, as follows:

2. **Habitat Description**

The life history of the Roaring Brook Mayfly is poorly known. It likely has a single-year life cycle, with most of the time spent instream as eggs and nymphs, and a brief period spent in the riparian area as adults in late summer and early fall.

- **Stream Conditions**: Cold, oxygen-rich water at high elevations with stable flows and low turbidity.
- **Riparian Vegetation**: Dense hardwood or mixed wood canopy providing >70% shade over stream channel.
- **Substrate**: Clean gravel, cobble, and coarse woody debris for egg attachment and nymphal cover.

3. **Management Objectives**

- Maintain and enhance intact riparian habitat for Roaring Brook Mayfly.
- Protect water quality to ensure:
    - Cold water temperatures
    - Minimized sedimentation and chemical input
- Conserve riparian organic inputs (leaves and woody debris) for stream dwelling nymphs

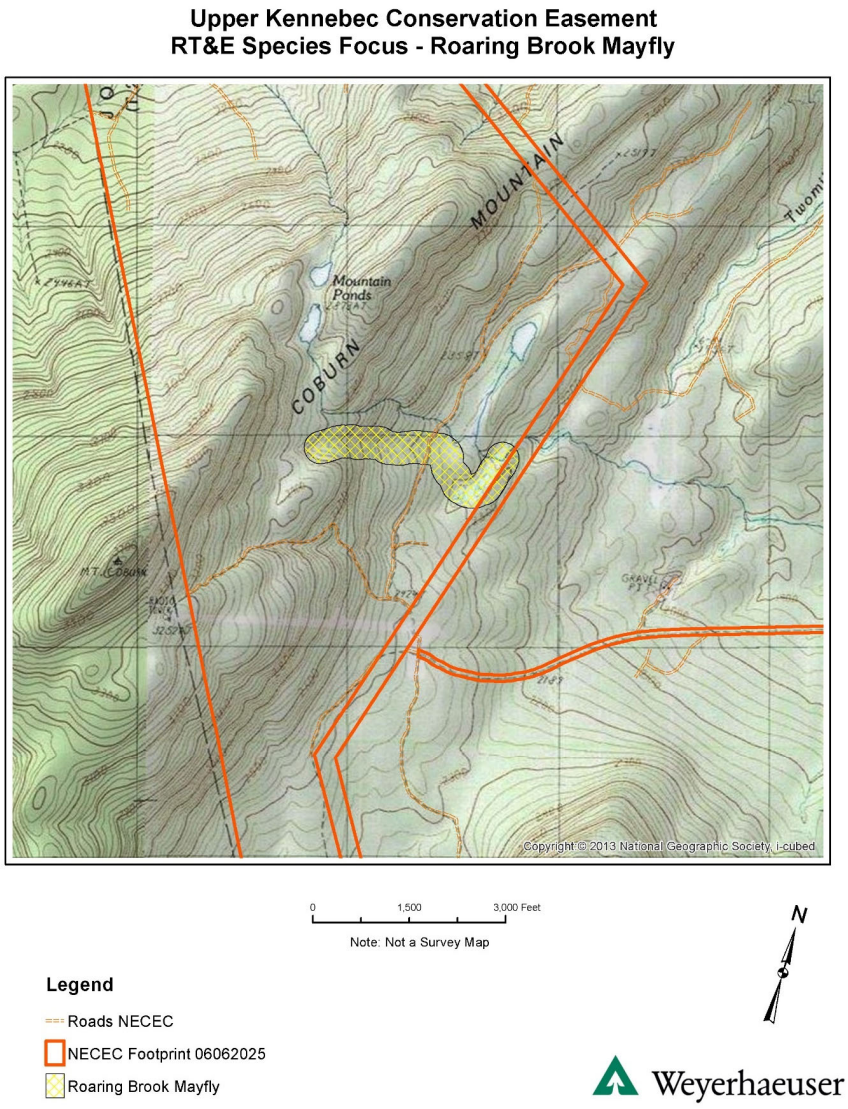
4. **Management Guidelines**

4.1. Silvicultural Practices

- For occupied streams shown in Figure ~~9~~11, within the first 50 feet on both sides of the stream, establish and maintain a no-harvest buffer.
- Between 50 feet and 250 feet from occupied streams, ensure that a mature forest condition is maintained.
- Harvest only during dry or frozen conditions.
- Minimize construction of roads, log landings or other permanent land use conversions within the 250-foot buffer of occupied streams.
- On slopes facing the stream, maintain an unscarified filter strip of at least the width indicated below between the normal highwater mark of the stream and any exposed mineral soil created by management activities. These recommendations follow minimum performance standards for timber harvest as defined in Maine LUPC Rules and Regulations (Chapter 10.27E).

Average Slope of Land (%)	**Width of Strip** (feet along surface of ground)
0	25
10	45
20	65
30	85
40	105
50	125
60	145
70	165

Figure 911. Map of Documented Occurrence of Roaring Brook Mayfly on Protected Property.



6.3 Rare and Exemplary Botanical Features

Hairy Arnica (State Threatened)

1. **Introduction**

Hairy Arnica (*Arnica lanceolata*) is a State-Threatened (S2, G3) rare plant species in Maine, where it reaches the southeastern edge of its natural range. It is typically found in open, cool, ledgy or gravelly rivershores and cliffs in subalpine environments, where the natural lack of soil and harsh environment restricts competition from other vegetation. Hairy Arnica is sensitive to disturbance and changes in the environment and has been documented in twelve towns from four counties in Maine. One population of this species has been documented on the Protected Property – See Map in **Figure ~~10~~12.** Management guidelines will be implemented in this area.

2. **Habitat Description**

- Hairy Arnica prefers partial sun to open canopy conditions with well-drained, rocky or sandy acidic soils, typically on ridgelines or south-facing slopes.
- Ledgy or gravelly shores or wet cliffs
- Alpine or Subalpine – non-forested uplands
- Non-tidal Rivershore (non-forested, seasonally wet)

3. **Management Objectives**

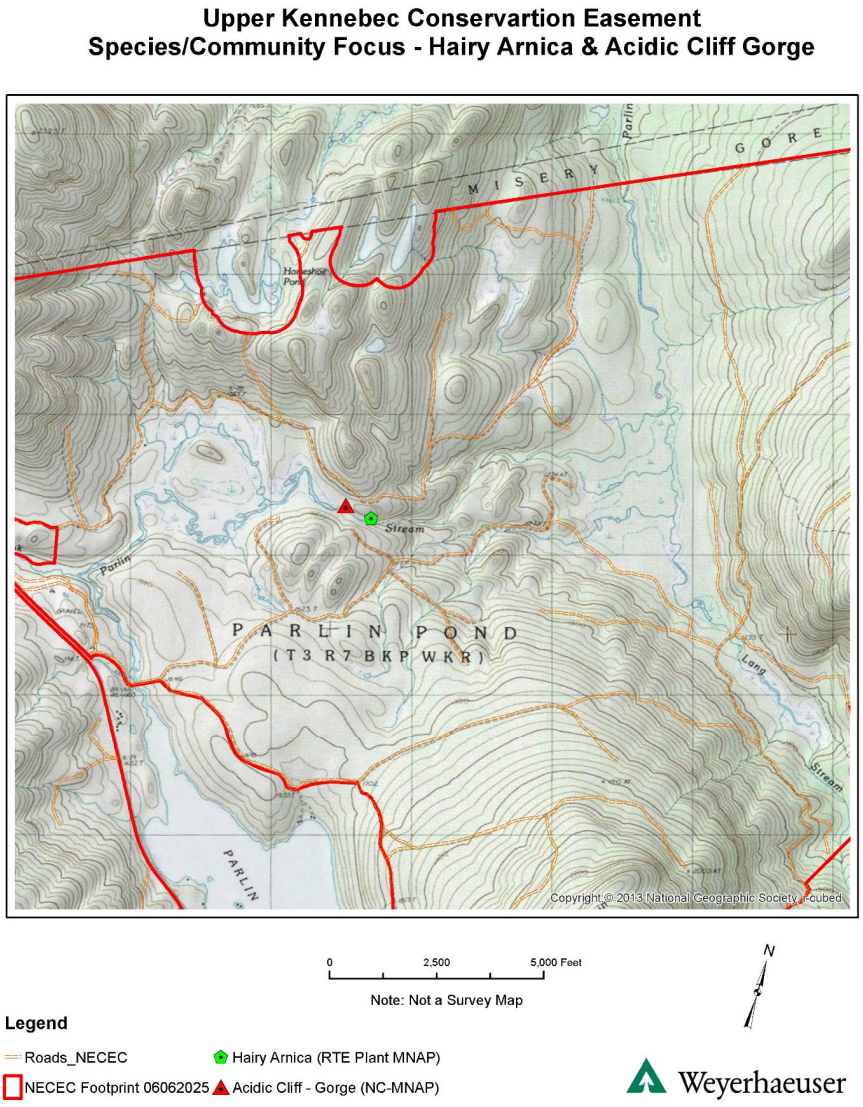
- Maintain and ensure the persistence of the known populations of Hairy Arnica found within the Protected Property.

4. **Management Guidelines**

4.1. Silvicultural Practices

- Provide a 25-foot no-harvest exclusion buffer around mapped sites of Hairy Arnica.
- Forest management activities adjacent to the exclusion buffer will be conducted to prevent impact on Hairy Arnica sites and will minimize soil and root zone disturbance.

Figure ~~10~~12. Map of Documented Occurrence of Hairy Arnica and Acidic Cliff Gorge on Protected Property.



Acidic Cliff-Gorge (Exemplary Natural Community)

1. **Introduction and Habitat**

An Acidic Cliff-Gorge is a sparsely vegetated, vertical to nearly vertical natural community type that is found infrequently throughout the Maine landscape but more commonly found in the northern portions of the state. The steep outcrops of non-calcareous, erosion-resistant rocks, such as granite or acidic schist are typically dry, with sparce vegetation. However, a moist microclimate may be maintained over local areas by runoff or seeps from higher elevations or, in gorges, by flowing stream water. Acidic Cliff-Gorges may host cliff-nesting bird species such as peregrine falcons or golden eagles and support a unique assemblage of vascular plants and lichens.

2. **Management Objectives**

Given the nature of the habitat and where they are found, these communities are usually inaccessible and therefore likely to be minimally affected by harvest operations. One occurrence of an Acidic Cliff-Gorge natural community has been documented on the Protected Property – See Map in **Figure ~~10~~12.** Management guidelines will be implemented in this area.

3. **Management Guidelines**

For any mapped and confirmed Acidic Cliff-Gorge occurrences on the Protected Property, no forest management activities will occur within the mapped community without consultation with the Maine Natural Areas Program.

6.4 Fish and Wildlife Habitat

Much of the Protected Property has ecological importance as wildlife and fisheries habitat, and protecting the property through the CE ensures that development will never adversely impact the ecological benefits of such habitats and their resident species. By preventing residential, commercial, industrial and other traditional development, conservation of the Protected Property under the terms of the CE will ensure the perpetual protection and preservation of its conservation values.

6.4.1 Deer Wintering Areas

1. **Introduction**

White-tailed deer are common throughout Maine but in northern portions they rely on Deer Wintering Areas (DWA) to survive winters. DWAs are dominated by softwood to provide thermal cover, decreased snow depth and access to food throughout winter. There is one zoned wintering area on the protected property: P-FW #080412 (89 acres) in Parlin Pond. Through consultation with MDIFW, a Biological Deer Wintering Area (BDWA) is identified in the southern portion of West Forks Plantation. This BDWA supports wintering deer from the Moxie Stream DWA (P-FW #060065) and Cold Stream Forest cooperative yard and is used by wintering deer during times of moderate snow depth and temperature during the yarding season. Weyerhaeuser (formerly Plum Creek) managed the Cold Stream Forest cooperative yard prior to the conservation sale as a 2,168-acre DWA. Refer to Maps in **Figure ~~11~~13** for location of the Parlin Pond Twp DWA and the West Forks BDWA.

2. **Habitat Description**

From *Guidelines for Wildlife: Managing Deer Wintering Areas in Northern, Western and Eastern Maine:* "Deer wintering areas include a variety of habitat components that may change with forest condition and management strategy. These habitat components contribute to the long-term functioning of a DWA as a source of winter shelter and food."

Primary Winter Shelter

Primary Winter Shelter (PWS) consists of forest stands that provide shelter for deer during the most severe winter conditions. PWS has the following: Softwood crown closure 70% mixed or solitary stands of cedar, hemlock, spruce, and fir; and Stand height 35 feet.

Secondary Winter Shelter

Secondary Winter Shelter (SWS) consists of forest stands that provide adequate shelter for all but the most severe winter conditions. SWS has the following: Softwood crown closure between 50% and 70% mixed or solitary stands of cedar, hemlock, spruce, and fir; and Stand height 35 feet.

Non-Mature/Future Shelter Stands

Stands mapped within a DWA that do not currently meet PWS or SWS definitions provide forage (woody browse) between and adjacent to stands that provide shelter. These stands enhance the value of a DWA, especially when managed to attain PWS or SWS criteria. DWAs often include areas such as south facing slopes that enhance solar gain during late winter. These areas may not meet SWS or PWS criteria but provide microclimatic benefits that contribute to DWA functioning.

Travel Corridors

Successful functioning of DWAs on a long-term basis requires travel corridors within the DWA. Traditionally used corridors often follow streams and wetlands, or topographic features such as ridgelines and valleys. Functional corridors are wide enough to provide deer with sheltered travel ways throughout the yard and are located to maintain direct access to winter shelter.

3. **Management Objectives**

3.1. Parlin Pond P-FW #080412

- Maintain minimum of 50% of stands that are softwood dominant as conforming winter shelter
- Use active forest management and a variety of silvicultural techniques to maintain and improve forest health while promoting desired future habitat conditions.
- Maintain travel corridors connecting the mosaic of habitats for cover and food.

3.2. Biological Deer Wintering Area

- Promote softwood cover in suitable areas to enhance overwintering deer habitat.
- Maintain travel corridors connecting the mosaic of habitats for cover and food.

4. **Management Guidelines**

4.1. Parlin Pond P-FW #080412

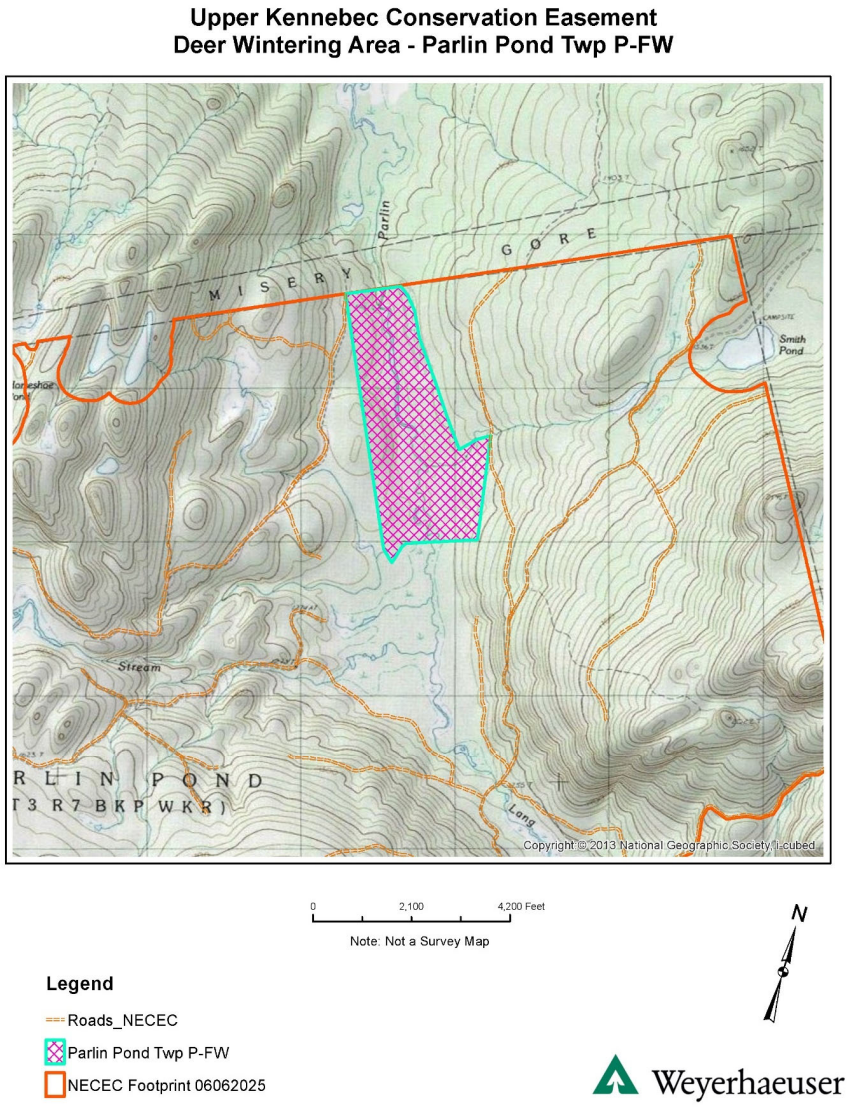
Prior to harvesting or new road construction, consultation with MDIFW regional biologists will take place and a plan will be developed collaboratively to meet the objectives above. Travel corridors

will be maintained through the Riparian Habitat Management Standards in the Conservation Easement (Section VII.A.6).

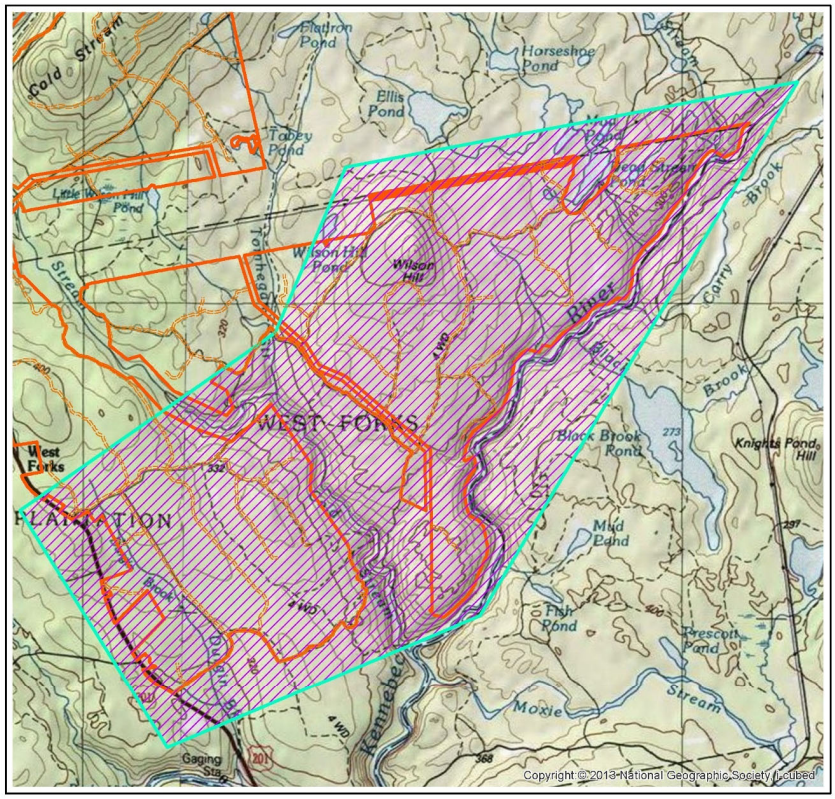
4.2. Biological Deer Wintering Area

The BDWA will be mapped in our system for awareness of supporting the adjacent deer wintering areas. When appropriate, softwood silviculture will be used to promote softwood within that area. Travel corridors connecting the various cover and food sources will be maintained through the Riparian Habitat Management Standards in the Conservation Easement (Section VII.A.6).

Figure ~~11~~13. Parlin Pond Twp P-FW (#080412) and the West Forks Pla. Biological Deer Wintering Areas



Upper Kennebec Conservation Easement
Biological DWA - West Forks Habitat Mgmt Area



0 5,000 10,000 Feet

Note: Not a Survey Map

N

Legend

- Roads_NECEC
- West Forks Biological DWA
- NECEC Footprint 06062025

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6.4.2 Significant Vernal Pools

1. **Introduction**

Vernal pools are small (usually less than one acre), natural, temporary or seasonally flooded depressions/wetlands that provide breeding habitat for a variety of amphibians and invertebrates, including obligate species such as spotted salamanders, wood frogs and fairy shrimp. In Maine, Significant Vernal Pools (SVPs) and their adjacent terrestrial habitat are designated and mapped by the Maine Department of Environmental Protection (MDEP). There are three documented SVPs and one Potentially Significant Vernal Pool on the Protected Property – See Map in **Figure ~~12~~14.** Special management guidelines should be implemented in these areas, as well as others identified in the future, as follows:

2. **Management Objectives**

- Protect hydrology and habitat of significant vernal pools (SVPs).
- Maintain a functional forested buffer around pools to support amphibian life cycles.
- Minimize soil disturbance and canopy loss in sensitive areas.
- Ensure compliance with Maine's Forestry Habitat Management Guidelines for Vernal Pool Wildlife (https://www.maine.gov/dacf/mfs/projects/kennebec_woodlands/downloads/documents/vernal_pool_hmg.pdf).

3. **Management Guidelines**

These guidelines shall be applied to Significant Vernal Pools shown in Figure ~~12~~14. Habitat management shall be based upon the *Forestry Habitat Management Guidelines for Vernal Pool Wildlife* (Calhoun & DeMaynadier 2004) – below is the Summary of Recommended Guidelines.

3.1 Within the Vernal Pool Depression

- Avoid all mechanical activity (e.g., skidding, felling, slash disposal).
- Maintain natural leaf litter and canopy to preserve water quality and amphibian habitat.

3.2 Managed Buffer (0 –100 ft)

- No harvest or partial harvest using low-impact equipment and techniques such as extraction by either boom or cable.
- Stabilize any exposed mineral soil.

- Maintain a minimum average of 75% canopy cover of trees minimum of 20 – 30 ft. tall, uniformly distributed.
- Preserve large, downed woody material and coarse woody debris.
- Schedule harvesting outside the amphibian migration and breeding period during dry or frozen soil conditions (ideally August - March).

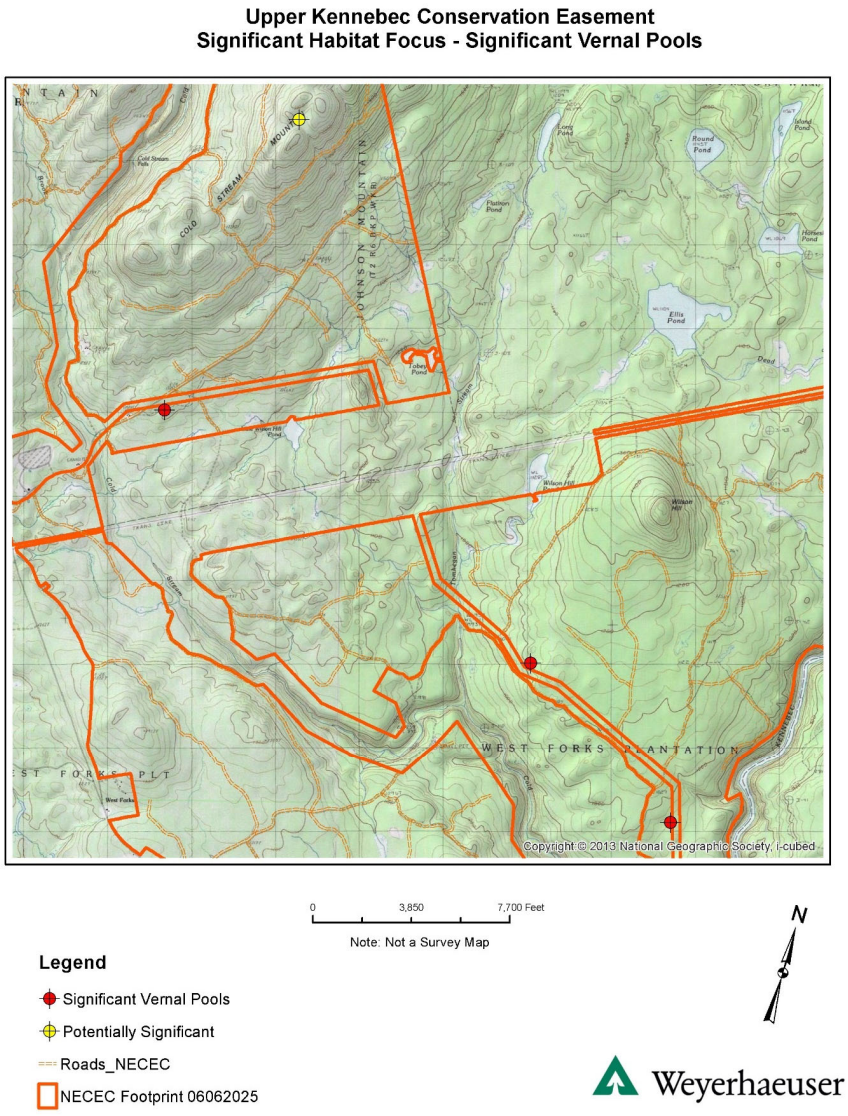
3.3 Amphibian Life Zone (100 – 400 ft)

- Partial harvest retaining at least 50% canopy cover of >20' tall trees
- Preserve as much large, downed woody material and coarse woody debris as possible.
- Schedule harvesting during dry and frozen soil conditions.

3.4 Road Construction and Access

- Avoid new roads and skid trails within 100 feet of an SVP unless no viable alternative exists.
- Road maintenance activities for existing roads can still be conducted even though they may bisect a significant vernal pool buffer.
- Employ erosion control measures (e.g., silt fencing, water bars) to protect water quality.

Figure ~~12~~14. Significant and Potentially Significant Vernal Pools on the Protected Property



6.4.3 Bat Hibernacula

Four of the eight bat species in Maine are protected by the Maine Endangered Species Act, while the remaining four species are designated species of Special Concern. Endangered species include little brown bat, eastern small-footed bat, tri-colored bat and the northern long-eared bat, which is also federally Endangered. Bat species of Special Concern include big brown bat, red bat, hoary bat and the silver-haired bat.

There has not been a comprehensive statewide inventory for bats in Maine and there are no known occurrences of these bat species on the Protected Property, but it is likely that some of these eight species may be found either during spring and fall migrations or the summer breeding season or both. Further, it is possible that there may be some individuals of these species overwintering on the Protected Property.

There are no known bat hibernacula or maternity roosts on the parcel. If bat hibernacula were either documented using winter acoustic surveys, or observations in caves on the Protected Property were confirmed to be occupied, tree removal would be prohibited within ¼ mile of the hibernacula under MDIFW Chapter 8 Rule of the Maine Endangered Species Act until MDIFW were consulted for management guidelines based on the best available science at the time.

6.4.4 Inland Wading Bird and Waterfowl Habitats

1. **Introduction**

Inland waterfowl and wading bird habitats (IWWH) in Maine - such as freshwater wetlands, marshes, forested swamps, small ponds, beaver flowages, and riparian areas - are critical breeding, nesting, brood-rearing and foraging grounds for waterfowl like geese and ducks and wading birds like herons and bitterns. There are several documented IWWH areas on the Protected Property – refer to Maps in **Figure ~~13~~15.** Management guidelines will be implemented in these areas.

2. **Habitat Description**

This habitat area includes the wetland area plus a 250-foot-wide zone of upland habitat around the wetland. IWWHs in Maine can be broadly classified into:

- **Forested Wetlands**: Red maple swamps, cedar swamps, or mixed hardwood wetlands.
- **Emergent Wetlands**: Marshes dominated by herbaceous plants.
- **Scrub-Shrub Wetlands**: Early successional habitats, often transitional zones.
- **Beaver Flowages and Vernal Pools**: Temporarily or intermittently flooded habitats.
- **Riparian Zones**: Forested buffers along rivers, streams, and lakes.

3. **Management Objectives**

- To protect ecological values of Inland Waterfowl and Wading Bird Habitat
- Minimize soil disturbance and canopy loss in buffer areas.
- Protect water quality and wetland integrity from management activities.
- Maintain a functional forested buffer around IWWHs to support wildlife ecologies.
- Minimize soil disturbance and canopy loss in sensitive areas.

4. **Management Guidelines**

Most of the mapped Inland Waterfowl and Wading Bird Habitat occurrences on the Protected Property are associated with a Perennial Stream that will be buffered as described in Section ~~4.2.3~~4.3.3. of this Forest Management Plan. Additional Management Guidelines are as follows:

4.1 Protect Core Habitat Areas

- No harvest or ground disturbance within 100 feet of IWWH water resources as currently depicted in Figure ~~13~~15 except to allow for maintenance or use of currently existing roads and landings.
- Maintain at least a 250-foot undisturbed buffer around active Great Blue Heron nesting colonies during the breeding season (April 15 through July 31st).

4.2 Buffer Zone Management

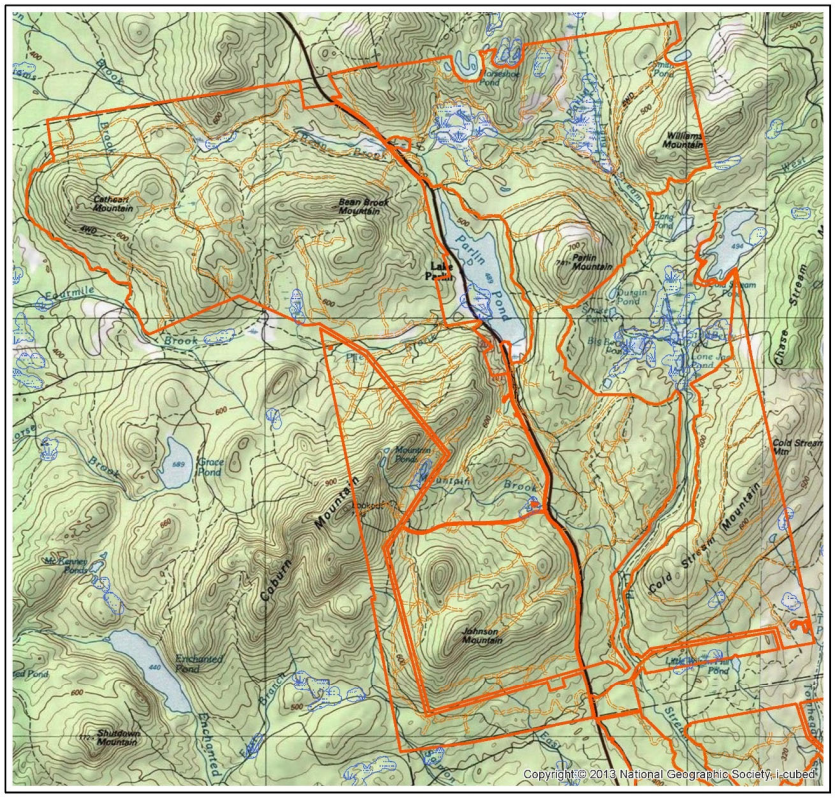
- Schedule harvesting during dry or frozen soil conditions and closely adhere to BMPs for water quality and wetland protection.
- Retain or manage a 100 to 250-foot variable edge buffer, depending on slope, soil type, and sensitivity.
- Promote multi-layered vegetation structure with a mix of conifers and hardwoods
- Maintain a well distributed overstory with >50% canopy closure in riparian corridors to preserve shade, temperature regulation, and nesting cover
- Protect downed woody debris and leave snags and live trees with cavities to support cavity nesting waterfowl and other wildlife species.

4.3 Seasonal Timing Restrictions

- Avoid harvest or ground disturbance within 100 feet of IWWH core areas identified in Figure ~~13~~15 during the breeding season (April 15 – July 31). Consultation with MDIFW is required if unavoidable.

Figure ~~13~~15. Inland Waterfowl & Wading Bird Habitat on the Protected Property

Upper Kennebec Conservation Easement
Significant Habitat - Inland Waterfowl & Wading Bird Habitat - Map #1



0 7,500 15,000 Feet

Note: Not a Survey Map

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Legend

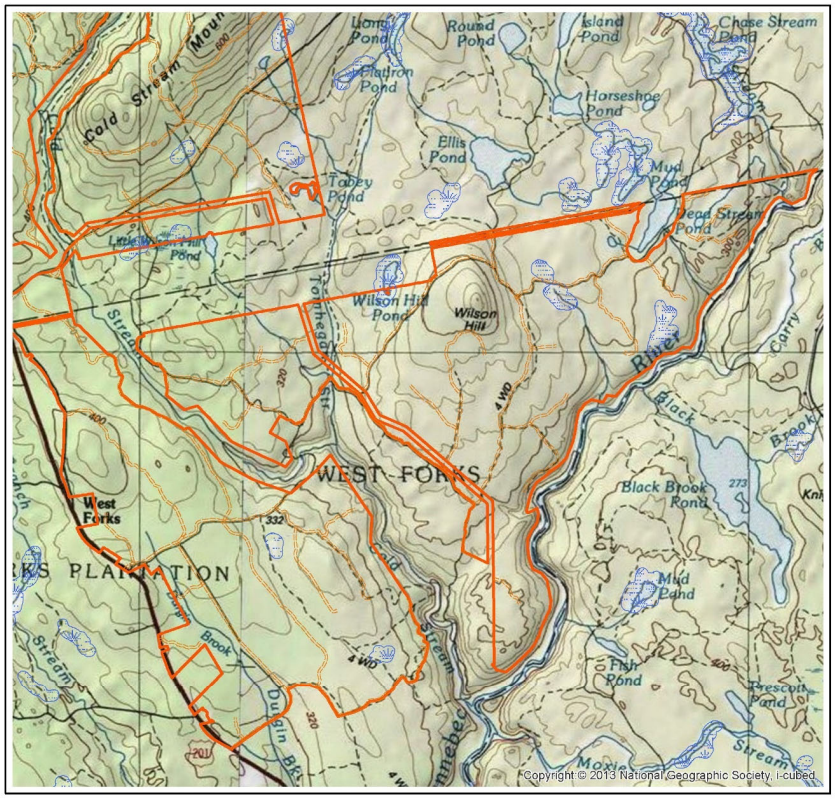
Roads_NECEC

Inland Waterfowl and Wading Bird Habitat

NECEC Footprint 06062025

Weyerhaeuser

Upper Kennebec Conservation Easement
Significant Habitat - Inland Waterfowl & Wading Bird Habitat - Map #2



0 5,000 10,000 Feet

Note: Not a Survey Map

N

Legend

- Roads_NECEC
- Inland Waterfowl and Wading Bird Habitat
- NECEC Footprint 06062025

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6.4.5 Aquatic Resources

Forest management activities around aquatic resources are governed by a combination of State regulations as required by Land Use Planning Commission (LUPC) and Best Management Practices as well as on the Protected Property by the 100 foot no-cut and 330 foot Mature Forest Buffers around perennial streams as outlined in this plan. In consultation with MDIFW, Aquatic Resources throughout the Protected Property were identified and suggested for further consideration as shown below.

State Heritage Fish Waters

1. **Introduction**

Waterbodies designated as State Heritage Fish Waters are critical lakes and ponds that support self-sustaining, high-quality populations of native wild brook trout. These waters are protected under Maine State law and require special consideration to ensure the long-term health of these sensitive ecosystems.

Brook trout require clean, cold, well-oxygenated water and are extremely sensitive to changes in riparian habitat, water quality and species composition. The following guidelines are designed to maintain or enhance water quality and habitat integrity in and around State Heritage Fish Waters.

There are five documented Heritage Fish Waters ponds totaling 51 acres on the Protected Property as shown in **Figure ~~14~~16** and listed as follows:

- Markham Pond – 3 acres
- Mountain Pond #2 – 3 acres
- Little Wilson Hill Pond – 13 acres
- Tobey Pond – 11 acres
- Wilson Hill Pond – 21 acres

Brook trout likely continue to thrive in these ponds due to continued cooler water thermal regimes, lack of competing non-native or invasive fishes, and the adaptability/resilience of wild brook trout in the absence of those major stressors. An important note is that past harvesting practices have followed current forest regulations and have therefore protected these ponds allowing them to retain their status as Heritage Fish Waters.

2. **Management Objectives**

- Protect water quality and maximize buffer integrity.
- Maintain a functional, mature forested buffer around lakes and ponds that minimize soil disturbance and canopy loss in sensitive areas.
- To conserve the ecological values associated with these waterbodies.

3. **Management Guidelines**

Protection of Habitat: Forest management practices will minimize threats associated with environmental and land-based activities that pose direct and indirect adverse impacts to heritage fish, their habitat, and their food sources

- Establish a riparian buffer around all Heritage Fish Waters
- The ponds shown in Figure ~~14~~16 will be buffered as described for Perennial Streams in Section ~~4.2.3~~4.3.3. of this Forest Management Plan.
- For Heritage Fish Waters under 10 acres
    - Retain >60% of the basal area within 150 feet of the water body as mature forest to maintain shade, temperature regulation and nesting cover.
    - Adhere to LUPC Subdistrict rules for P-MA zones as required around Mountain Pond #2
    - Maintain an unharvested buffer zone of 100 feet from the high-water mark
    - Limit operation of heavy machinery within 100 feet of waterbodies except at designated crossings
- For Heritage Fish Waters over 10 acres
    - Retain >60% of the basal area within 250 feet of the water body as mature forest to maintain shade, temperature regulation and nesting cover.
    - Adhere to LUPC Subdistrict rules for P-GP, and P-MA if required.
    - Maintain an unharvested buffer zone of 100 feet from the high-water mark
    - Limit operation of heavy machinery within 100 feet of waterbodies except at designated crossings
- Avoid new road construction within 250 feet of State Heritage Fish Waters unless no feasible alternative exists.

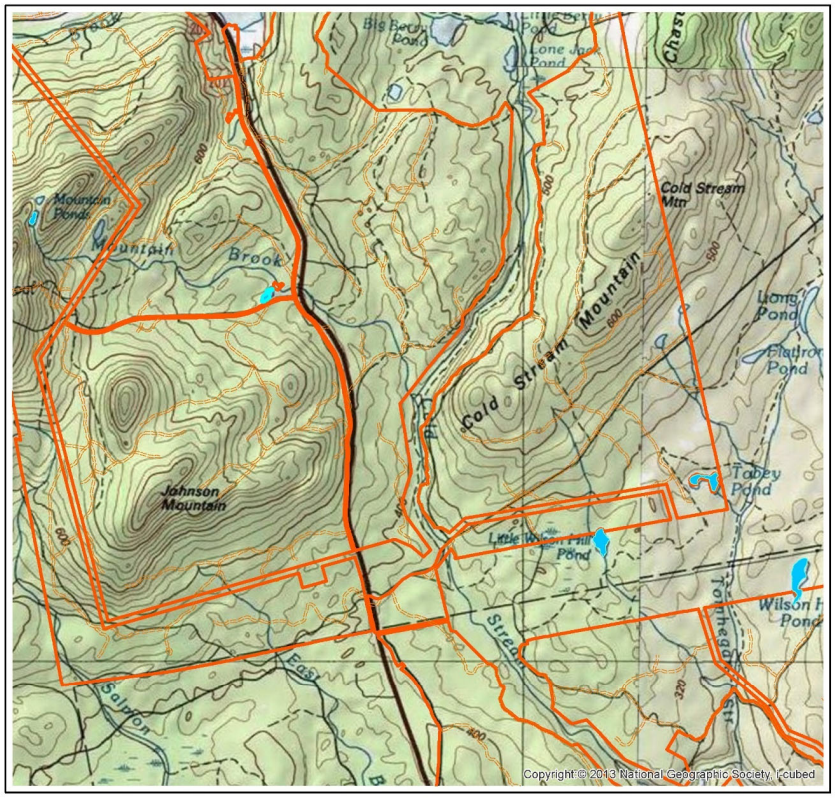
Protection of Water Quality: Forestry BMPs are crucial for protecting water quality during timber harvests. The intent is to minimize soil erosion and sedimentation, which can harm these sensitive aquatic habitats.

- Schedule forest management activities near these water bodies to take place outside the spring snowmelt and fall spawning periods.
- Conduct harvesting during frozen ground or dry conditions to reduce rutting and sedimentation risks.
- Implement BMPs such as waterbars, ditch turnouts, silt fencing, and regular road maintenance to prevent erosion issues and sediment delivery to streams.

Stream Crossings: Properly sized and installed stream crossings for forest roads and trails are essential for protecting water quality and allowing fish passage to upstream habitats. Adherence to standards and laws for placing wood into stream channels are important for protecting these cold-water fisheries habitats. Use bridges or open-bottom arch culverts where possible for stream crossings. Size crossings to accommodate 100-year flood flows and allow aquatic organism passage where possible.

Figure ~~14~~16. State Heritage Fish Waters on the Protected Property

Upper Kennebec Conservation Easement
Significant Habitat - State Heritage Fish Waters



0 4,750 9,500 Feet

Note: Not a Survey Map

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Legend

- Roads_NECEC
- Maine Heritage Fish Waters on Prot. Property
- NECEC Footprint 06062025

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Riparian Buffers and Stream Crossings

The Protected Property contains numerous other lakes, ponds and streams that provide suitable habitat for cold water fisheries and other aquatic species. Proper riparian management is important for the protection of water quality and cooler temperatures, along with promoting the accumulation of coarse woody debris; all of which is vital to the many ecologies that require these inputs and conditions. Intact and well managed riparian buffers are also used as travel corridors for a variety of wildlife species. Forested buffers will be maintained along all perennial streams and wetlands to ensure the proper maintenance of these valuable habitats.

All forest management and road construction activities within the Protected Property, including stream crossing installation and maintenance, will utilize current Best Management Practices to avoid erosion, sedimentation, stream flow alterations and other impacts that would have an adverse impact on fish and other aquatic life.

The Protected Property has had active forest management activities conducted many times in the past. Given the terms as mandated by the Conservation Easement, the increased buffers on substantial miles of perennial streams will ensure that the waters on the Protected Property will continue to provide quality habitat for riparian species present today.

6.4.6 Other Species of Special Concern from Consultation with IF&W

MDIFW identified several potential Species of Special Concern that might be present on the parcel but haven't been documented due to limited formal surveys. Many of these species' needs are protected under the CE Riparian Habitat Management Standards or documented Species of Concern. Listed below are the identified potential species and how they will be addressed.

Bats

There are no known bat hibernacula or maternity roosts on the parcel. Bat hibernacula have already been addressed above. Maternity roost trees for many bat species are present on the landscape through retention of snags and other wildlife trees during forest management activities when safe to do so. The Riparian Habitat Management Standards will also provide future roosts in the 100 foot no harvest buffers and also within the 100-330 foot managed buffer maintaining mature forest. This variation will also provide different solar inputs on roost trees adding to the diversity of species that can find an appropriate roost site.

Great Blue Heron

There is a known historical Great Blue Heron colony east of the parcel in Misery Twp but none on the parcel. The adjacent colony is monitored annually for activity. If an active colony is discovered on the parcel (by the Grantor or other biologists), we will consult with MDIFW for management guidelines based on the best available science at the time.

Northern Bog Lemming

If any known occurrence is documented~~,~~ (by the Grantor or other biologists), we will consult with MDIFW for management guidelines based on the best available science at the time.

Blackpoll Warbler

Blackpoll Warblers and Bicknell's Thrush overlap in elevation, though Blackpolls may use older stands than ~~Bicknells~~Bicknell's for nesting. Timing restrictions on harvesting activities within identified Bicknell's Thrush habitat on Coburn Mountain will protect Blackpoll Warblers as well.

Northern Spring Salamander

Northern Spring salamanders occur in headwater streams with coarse substrates in deciduous and mixed wood forests. The Riparian Habitat Management Standards in the CE provide protection on perennial streams identified on the parcel. If a known occurrence outside of these buffers is documented, (by the Grantor or other biologists), we will consult with MDIFW for management guidelines based on the best available science at the time.

Wood Turtle

Wood Turtles prefer slow-moderate moving rivers and large streams in forested landscapes. There are no known occurrences and the Riparian Habitat Management Standards in the CE provide protection in alignment with the guidelines. If a known occurrence is documented, (by the Grantor or other biologists), we will consult with MDIFW about management guidelines based on the best available science at the time.

6.5 Invasive and Pest Species

As with any forest such as that found on the Protected Property, invasive species may be found from time to time. Invasive species are considered non-native organisms (insects, plants, animals, fungus, etc.) that, when introduced, cause or are likely to cause harm to the environment, economy, or human health. Examples of invasive insect and plant species that may be found over time in the Maine forests include Emerald Ash Borer, Browntail Moth, Spongy Moth, Bittersweet, Knotweed, as well as Phragmites and Aquatic Milfoil. Invasive species control involves prevention, early detection, and management through methods like mechanical, biological, and chemical treatments. Grantor will cooperate with agencies (e.g., MFS) in monitoring programs for invasive species (e.g., emerald ash borer). Controlling the introduction and spread of invasives can be done through both direct and indirect methods. Grantor will individually (and collectively with state and other partners) develop appropriate strategies at specific sites. Considerations for control may include:

- If the invasive site currently is or may in the future adversely impact forest regeneration.
- If the invasive site currently is or may in the future adversely impact a Threatened or Endangered species or Species of Concern site.
- If the invasives site is deemed appropriate and reasonable by Grantor to treat after consultation with state experts, as appropriate. Reasons for treatment may include forest regeneration, impacts to a specific special site, or to lessen spreading risk based on a landscape context for that specific invasive species.

Native species, such as the eastern spruce budworm, can also be pests of concern. The eastern spruce budworm is a native insect that periodically (roughly every 30 to 60 years) undergoes population outbreaks, causing extensive defoliation of spruce and fir trees. Upcoming outbreaks in Maine can often be forecast by monitoring in adjacent Southern Quebec. Effective management of spruce budworm in forestry involves a combination of proactive measures to mitigate its impact and maintain forest health. Key strategies to mitigate the risks of spruce budworm are monitoring and early detection, along with treatment of affected areas with an appropriate treatment, including insecticides such as tebufenozide (e.g., Mimic) and biological controls such as *Bacillus thuringiensis* (Bt). Joint efforts by multiple landowners, researchers, and agencies, such as the Maine Budworm Response Cooperative, Maine Forest Service, Maine Forest Products Council, and University of Maine's Cooperative Forestry Research Unit, can be and are utilized as effective strategies to share knowledge, research, and data. There are also several online GIS-based tools that can assist foresters in the early detection and identification of potential invasive insect and plant species.

6.5.1 Potential Forest Health Considerations

To expand upon these concepts, the following considers in more detail some potential threats to the forest health of the Protected Property and what current activities are occurring to further understand and potentially deal with these threats.

As noted, foresters are trained and responsible for field review of potential local forest health problems and concerns as they conduct their normal field duties. As part of any Integrated Pest Management (IPM) program, monitoring for early detection and tracking findings is critical to getting ahead of such concerns.

Below is a brief summary of the status of a few current threats that may impact the Protected Property through time.

Spruce Budworm

Weyerhaeuser's strategy to address the potential threat of this native insect is built around early detection, targeted intervention, and collaborative response. It aligns with broader regional efforts, including those led by the Maine Budworm Response Coalition, University of Maine, and Maine Forest Service.

Key components include:

1. Monitoring & Detection

- Weyerhaeuser participates in L2 monitoring (tracking overwintering larvae) across over 100 sites in Maine.
    - Of the 100 sites in Maine, three L2 monitoring sites fall within the footprint of the Protected Property while five more are within two miles of the Property.
- Collaboration with the University of Maine's Spruce Budworm Lab, ensures timely data collection and hotspot identification.

2. Early Intervention Strategy (EIS)

- EIS targets small SBW hotspots before populations reach outbreak levels.
- Insecticides like tebufenozide (Mimic) and biological controls such as Bacillus thuringiensis (Bt) are used to suppress larvae while minimizing harm to pollinators.

3. Silvicultural Adjustments

- Weyerhaeuser's internal plans recommend stand rotation and road upgrades to improve access and reduce vulnerability.

- Significant pre-salvage operations are not currently included in the SPW risk management strategy, as the planned EIS approach has demonstrated effectiveness in other regions. However, should substantial mortality occur in merchantable softwood stands—particularly those dominated by balsam fir—these areas will be prioritized for final harvest. This will support outbreak management and facilitate regeneration for the next rotation.
- The necessity and scope of any pre-salvage or salvage activities will be evaluated annually and communicated to the holder during the annual meeting. These assessments will consider ongoing progress toward the mature forest milestones outlined in the Conservation Easement.

4. Collaborative Partnerships

- Weyerhaeuser works with agencies like the Maine Forest Products Council, Maine Forest Service, and University of Maine's Cooperative Forestry Research Unit.
- Joint efforts include data sharing, research, and coordinated aerial spray programs

Emerald Ash Borer

The Maine Forest Service has established quarantine zones for the Emerald Ash Borer (EAB) that now include southern portions of Somerset County. The nearest detection was in Solon in 2025, about 30 miles south of the Protected Property. Currently Weyerhaeuser foresters continue to monitor for signs of this pest as instructed by the Maine Forest Service which also continues to monitor EAB using traps and bio-surveillance methods. In the event EAB is detected, Weyerhaeuser will engage the Forest Service and work to attempt to manage and limit the advancement of this invasive pest.

Beech Leaf Disease

As of 2025, Beech Leaf Disease (BLD) has been confirmed to be found in all counties in Maine, including southern Somerset County. This marks a significant expansion since its initial detection in 2021. While no detections have been reported north of the township of Cambridge, the rapid spread of this relatively new disease in Maine suggests that it is just a matter of time before it is present on the Protected Property.

BLD is caused by a microscopic nematode that overwinters in the buds of beech trees. Symptoms include dark bands on the leaves, curled and deformed leaves, and a diminished, thinning canopy due to premature leaf drop. Tree mortality tends to occur within 2–7 years, especially in smaller trees. Weyerhaeuser foresters are aware of the potential for this disease and will report sightings to the Maine Forest Service to aid in tracking and response.

Hemlock Wooly Adelgid

The Hemlock Woolly Adelgid (HWA) continues to expand its range in Maine, particularly in southern and coastal regions. As of the latest available data, HWA has not been confirmed in Somerset County, but it is approaching from the south and east. Vigilant monitoring is recommended especially in areas with naturally occurring eastern hemlock. The Maine Forest Service has put a quarantine in place that restricts the movement of hemlock nursery stock, logs, and other materials from infested to not yet infested areas. Regular monitoring of the advancement of this invasive pest is important, and Weyerhaeuser foresters are aware and on the lookout for the potential given the hemlock present on the Protected Property.

Forest Tent Caterpillar

The forest tent caterpillar (FTC) is a native defoliator of deciduous hardwoods in Maine, especially aspen, sugar maple, oak, and birch. In 2025, northern and central Maine experienced a continuing outbreak of FTC which was part of a broader regional cycle that began around 2022. Populations follow boom-and-bust cycles, with outbreaks every 10–15 years, lasting 2–5 years. FTC was the most commonly trapped moth in Maine in 2024, with over 1,100 specimens, indicating elevated population levels. Although numbers slightly declined in 2025, defoliation remained widespread. Most affected trees regrew leaves later in the summer, but repeated defoliation over multiple years can lead to reduced growth, increased susceptibility to pests, and tree mortality.

The Maine Forest Service emphasized natural population control via predators and parasites, especially the "friendly fly", which surged in response to the outbreak. For severe infestations, Bacillus thuringiensis (Bt) can be used, especially on early instar larvae. Monitoring and detection of this native pest is important, and Weyerhaeuser foresters are aware and on the lookout for the potential for widespread defoliation on the Protected Property. In the event of moderate to heavy defoliation (>30%) Weyerhaeuser will consider intervention, especially if repeated over multiple years and will consult with the Holder in advance of implementation of an intervention strategy.

Invasive Plants

Two species of invasive plants that are most often or likely found on the Protected Property are Phragmites and Japanese Knotweed. While both are likely, there are only two documented locations of Phragmites on the edge of the Protected Property along the Mining Road, and no documented locations of knotweed.

Given the various modes of spread of invasive plants, it is quite possible if not likely that additional incidents of these or other invasive plant species could become established on the Protected Property. Foresters are aware of the potential and are trained to identify various species of invasive plants that may be found in the future and as noted previously, Weyerhaeuser has a process in place for documenting observations and locations of such species for interventions as needed.

6.6 Forest Chemical Use

Forest chemical use on the Protected Property will be for silviculture and pest control purposes.

For silviculture purposes, herbicides may be used to control competing vegetation in early stages of stand development, typically in recently established softwood stands. In some cases, herbicides may be used to address a reforestation issue, such as poor growing stock or inadequate stocking levels that may result from natural regeneration challenges.

Pesticides may be used to control insects, such as sawfly and spruce budworm, invasives, or other unforeseen future forest pests.

In all cases, any forest chemical use will be minimized to the extent practicable and strictly follow all State and Federal laws. In addition, all chemical use will adhere to all best management practices and protocols, label requirements, applicator licensing requirements, and current research.

6.6.1Pesticide Program

The Pesticide Program includes both herbicide and insecticide use. The program emphasizes integrated pest management (IPM), compliance with company policies and standards, and thorough monitoring of pesticide applications to ensure effectiveness and to minimize environmental impact. All activities are overseen by licensed applicators and adhere to Maine Board of Pesticide Control regulations.

Insecticide Use

The last significant application of insecticides for insects in Maine occurred in the early 1990s for a sawfly infestation in spruce plantations. As of 2022, it is recognized that major infestations of the spruce budworm are in Quebec and New Brunswick and future management and control, including spraying, may occur in Maine within the next 10 years (cf. CFRU, MFS and MFPC data).

Weyerhaeuser's strategy to address the potential threat of spruce budworm is built around early detection, targeted intervention, and collaborative response as described elsewhere in this plan. Weyerhaeuser participates in L2 monitoring (tracking overwintering larvae) across over 100 sites in Maine, three of those sites fall within the footprint of the Protected Property. In the event this threat requires intervention for control, insecticides such as tebufenozide (Mimic) and biological controls such as Bacillus thuringiensis (Bt) may be used to suppress larvae. In the event this step is warranted, Weyerhaeuser will collaborate with the Holder to ensure that the requirements of the conservation easement are met.

Herbicide Use

Herbicide use focuses on managing competing vegetation in softwood plantations and naturally regenerating stands to enhance growth and stocking levels, with careful consideration of ecological and regulatory factors.

WY has paused its Maine planting and conifer release programs and is not planning any site preparation herbicide applications in the coming year. Silvicultural practices using herbicide is for one of three purposes:

1. Controlling competing vegetation in either (a) recently established softwood plantations to protect the investment of these plantations, or (b) softwood-dominated natural regeneration where softwood growth rates can be increased with removal of the hardwood competition. A "release spray" herbicide application would be prescribed in these situations following a site assessment of competing vegetation on a case-by-case basis.

2. To address a reforestation issue such as poor or unacceptable growing stock or inadequate stocking levels, both resulting from natural regeneration. A site preparation herbicide application would be followed by planting on a case-by-case basis.

3. To address the presence of invasive species such as phragmites or knotweed, spot treatments are employed to manage small sites of invasives, often found along forest roads or at landing areas. Spot treatments typically involve the targeted application of herbicides or manual removal of invasive plants at the identified sites, ensuring minimal impact on surrounding native vegetation. Foresters are trained to identify and document these incident sites, recording GPS locations and detailed observations, which they then submit to the company staff biologist. After receiving incident reports from foresters, the staff biologist reviews the data and schedules treatment activities, sometimes involving additional field assessments to determine the most effective approach to prevent further spread.

In order to be consistent and have well trained and informed participants in any herbicide applications, Weyerhaeuser developed an Herbicide Application Manual that has been in place and regularly updated for the aerial application of chemicals. In the event such applications are warranted in the future, this manual will serve as an invaluable tool, outlining proper application methods to ensure safety and environmental integrity. A copy of this manual can be provided to the Holder upon request should aerial herbicide applications resume.

Spot herbicide applications have been conducted in the past to address incidents of invasive species such as Japanese knotweed and Asiatic Bittersweet using over the counter herbicides when small, isolated incidents of invasives have been located. In the event more significant

herbicide use becomes a need in the future, Weyerhaeuser will inform the Holder of such applications.

Pesticides - Process/Procedures

As noted above, Weyerhaeuser has no current plans for the use of insecticides or for conducting site prep aerial applications of herbicides for conifer release. In the event applications become warranted, use will be minimized to the extent practicable and only chemicals licensed by the EPA and registered for use in Maine will be used for such purposes. Weyerhaeuser will follow all Maine Board of Pesticide Control rules and regulations including the use of licensed pesticide applicators in good standing. For aerial herbicide applications, Weyerhaeuser's Maine Herbicide Manual as noted previously will be strictly followed. All chemical use will adhere to best management practices and protocols, label requirements and will be based upon the latest and most current research. The Holder will be notified in the event that pesticide use becomes a need in the future for the Protected Property.

6.7 Climate Change

Climate change increases uncertainty about future forest conditions. A changing climate will likely affect tree growth rates, mortality, disturbance patterns and the distribution of tree species after disturbances. Models suggest that we will experience shifts in the ranges of trees and other plants, animals, and pests. More frequent extreme wildfires and weather events will lead to altered disturbance regimes and will necessitate adjustments in forest operations and planning. Management aimed at addressing these uncertainties must change over time with the best available science.

Detailed below are key risks identified and Grantor's plan to address:

- Risk: Decreased forest health & productivity due to increased invasive insect species, diseases & pathogens, and tree stress from less-than-optimal growing conditions resulting from changing precipitation and/or temperature patterns.
    - Increase forester awareness of forest health issues, discovery and monitoring of new issues, coordination of reporting and information exchange with state and academic partners, and research collaboration.
    - Maintain complex forest structure, diverse forest composition, healthy soils, and address invasive species as appropriate.

- Risk: Damage to company infrastructure such as roads and stream crossings from changing precipitation patterns and extreme weather events.
    - When constructing new or replacing existing stream crossings, size the new structure according to Stream Smart principles to address future likely increased water flows.
    - When building new or upgrading legacy roads, address future potential increased water flows by installing adequate drainage such as the proper size and spacing frequency of cross-drain culverts.

- Risk: Increased concern for water resources (quantity and quality) from changing precipitation patterns and wildlife species from changing habitat.
    - Implement BMPs to address water quantity and quality issues as precipitation patterns change or extreme weather events increase.
    - Train foresters and logging/road contractors in BMP implementation that includes climate smart practices.
    - Collaborate on related research and new tool development and incorporate shared learnings into our practices.

    - Collaborate with third parties to upgrade stream crossings beyond our own road program capabilities.
    - Provide diverse forest structure, forest composition, habitat structures like legacy trees, and snags, special site protections, threatened & endangered species conservation, healthy soil and water bodies (wetlands, riparian areas, vernal pools, ponds, etc.) at the connected landscape level to maintain biodiversity resilience into the future.

- Risk: Increased wildfire risk due to changing precipitation patterns.
    - Increase coordination with state agencies responsible for fire responses.

Climate change effects may impact the growth models used as a basis for establishing the Mature Forest Habitat projections set forth in this FMP, including the ten-year Milestones anticipated to be achieved, as described in Section ~~3.1~~4.1. The Grantor will evaluate the potential impacts of climate change on the Mature Forest Habitat projections and will be prepared to present such impacts as may be necessary during annual meetings with Holder. If any given Milestone is not met due to climate change impacts (such as "Force Majeure Events" described in Section ~~4.3.3~~4.4.3 - hurricane, fire, flood, drought, disease, or forest health pest outbreak), Grantor and Holder agree to mutually discuss solutions.

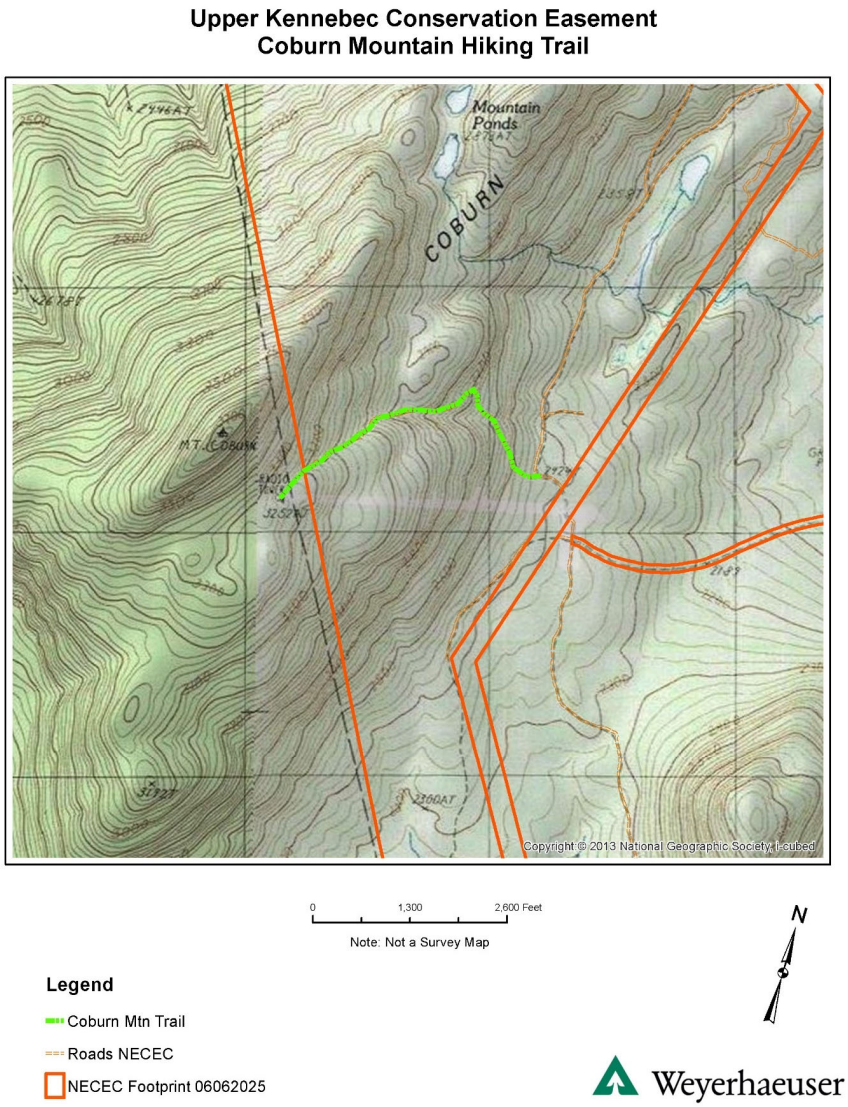
6.8 Recreation

Access for recreation, including rules and regulations, is addressed above in Section 5.7.

Description and Mapping of Known Recreational Spots and Trails:

There are no designated hiking trails on the Protected Property. There is one unofficial hiking trail located in Johnson Mtn Township near the base of the former Enchanted Mtn Ski Slope. The approximate location of the trail is mapped in **Figure ~~15~~17**. The trail is located on a former logging access road on the toe slope of Coburn Mountain and is unimproved and unsigned.

Figure ~~15~~17. Coburn Mountain Trail in Johnson Twp on the Protected Property



7.0 Regulations Applicable to the Protected Property

There are several state and federal laws that apply to forest management activities within the State of Maine. Weyerhaeuser requires strict adherence to the various requirements of the following regulations in all forest management activities on Maine timberlands. Weyerhaeuser monitors these laws and regulations for change and works to ensure company forest managers have the information and tools they need to understand and adhere to these requirements.

7.1 Forest Licensing Law

This law requires that any individual hired to provide professional forestry services, such as creating a management plan or overseeing a harvest, must be licensed by the state. Weyerhaeuser employs licensed professional foresters to manage all company timberlands, including the Protected Property in Maine.

7.2 Tree Growth Tax Law

The Protected Property is enrolled in the Tree Growth Program and current plans are valid through 2027. Maine's Tree Growth Tax Law offers property tax relief for landowners who manage their forested land for commercial timber production, allowing it to be valued for its current use rather than its potential development value. To qualify, land must be used for a commercial forestry enterprise, and landowners must notify the town or state assessor and meet specific acreage and management requirements. Property owners pay an annual excise tax at a set rate per acre and face penalties if they withdraw land from the program.

This law is a tax program that provides for the valuation of forestland based on its productivity value, rather than its market value, for property tax purposes. To qualify for this tax treatment, landowners must:

- Maintain a minimum of 10 forested acres.
- Have a management plan developed or reviewed and approved by a licensed forester.
- Actively practice forestry on their land.

7.3 Protection and Improvement of Waters Law

The Maine Protection and Improvement of Waters law (Title 38, Chapter 3 of the Maine Revised Statutes) complements the federal Clean Water Act (CWA) by providing a state-specific framework that aligns with and expands upon federal water quality goals. This law and the Erosion and Sedimentation Control Act require all landowners to protect water quality during forest operations. The law works in conjunction with other state regulations, such as the Maine Forest Practices Act, to prevent water pollution and protect water quality during timber harvesting and other forest operations.

Key aspects of forest management covered by the law:

- Protection of water bodies: Forest operations are regulated to prevent erosion and sedimentation that can harm water quality in protected areas, including rivers, streams, brooks, and wetlands.

- Shoreland Protection: Timber harvesting is also regulated by Statewide Standards for Timber harvesting in Shoreland Areas, expanded upon below.

7.4 State of Maine Forest Practices Act, 12 MRS §§ 8866 et seq.

Forest management is governed by a combination of state and federal regulations designed to ensure sustainable practices, protect natural resources, and preserve wildlife habitat. The most significant state-level law is the Maine Forest Practices Act, overseen by the Maine Forest Service MFS).

The Maine Forest Practices Act is found within **Title 12, Part 11, Chapter 805, Subchapter 3-A** of the Maine Revised Statutes. The law is officially titled "Forest Harvest Regulations" and is managed by the Maine Forest Service (MFS). This law mandates specific standards for commercial timber harvesting, particularly to prevent "liquidation harvesting," where timber is rapidly harvested with no plans for regeneration.

Administrative rules under the Forest Practices Act cover forest operations, with a focus on clearcutting, forest regeneration, and activities in sensitive shoreland areas.

The primary rules include:

- **Chapter 20 Rule: Forest Regeneration and Clearcutting Standards**: This rule governs performance standards for clearcuts, including size limitations, separation zones, and requirements for regeneration following a harvest.
    - **Clear-cut definitions**: A clear-cut is defined as timber harvesting on a forested site greater than 5 acres that results in a residual stand density below a certain threshold. Timber harvesting operations that create clear-cuts of over 5 acres must meet performance standards regarding size, separation zones, and regeneration.
        - Separation zones: Clear-cuts must be separated from one another by forested separation zones to limit the overall size of harvested patches.
    - **Forester involvement**: A Licensed Forester must prepare harvest plans for clearcuts larger than 20 acres. For larger clearcuts (Category 3, greater than 75 acres), the plan must be submitted to the Maine Forest Service for approval 60 days in advance.

- **Regeneration requirements**: There must be adequate regeneration of trees within five years after harvesting. After a clear-cut, the harvested site must be regenerated to a new stand of trees that meets specific density and height requirements.

- **Chapter 21 Rule: Statewide Standards for Timber Harvesting and Related Activities in Shoreland Areas**: This rule provides specific regulations for forest management activities within Maine's protected shoreland zones, which include areas near lakes, ponds, rivers, streams and wetlands, to protect water quality and minimize soil erosion. Key requirements include:
  - Vegetation clearing limits: Strict limits are placed on the amount of tree clearing allowed within the shoreland zone to maintain water quality and habitat.
  - Erosion control: Landowners must take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected resource. The expectation is that BMPs will be put in place in advance and will be utilized during project activities.
- **Chapter 26 Rule: Forest Operations Notification Standards**: Landowners or their agents must notify by filing a Forest Operations Notification with the Maine Forest Service before beginning any timber harvesting activities; Notification must be posted at the harvest site during the harvest activities. Landowners who file a notification are required to submit an annual report of their harvesting activities to the MFS by January 31st of the year following activities.
- **MFS Chapter 27 Rules: Timber Harvesting and Related Activities in Unorganized Areas**: This rule specifically regulates timber harvesting and forestry-related activities and sets standards for operations specifically within the unorganized territories, operating as a set of specialized rules within the broader framework established by Chapter 10. Chapter 27 focuses exclusively on the specifics of timber harvesting, land management roads, and gravel extraction for forestry purposes.
- **Other applicable laws**: All harvesting activities must also comply with other relevant federal, state and local laws, rules and any town ordinances.

7.5 LUPC Chapter 10 – Land Use Districts and Standards

Maine's Land Use Planning Commission (LUPC) Chapter 10, "Land Use Districts and Standards," contains the comprehensive administrative rules that govern land use activities and zoning in the unorganized areas of the state such as the Protected Property covered by this forest management plan. It is the primary document used to determine what is and is not permitted within specific

land use subdistricts. Chapter 10 sets the overarching land use standards, including zoning districts and rules for a wide range of activities in the unorganized territories.

LUPC Chapter 10 is used in conjunction with MFS Chapter 27 whereby LUPC Chapter 10 defines *where* forest management can occur, and MFS Chapter 27 defines *how* the specific forestry activities are to be conducted.

7.6 Federal Regulations Influencing Forest Management in Maine

Federal regulations influencing Maine's forest management include the Endangered Species Act (ESA), which protects threatened and endangered species and their habitats, and regulations under the Clean Water Act (CWA) that govern water quality in forests as noted previously.

Here's a breakdown of the key federal laws:

- **Endangered Species Act (ESA) of 1973:** The Endangered Species Act establishes protections for fish, wildlife, and plants that are listed as threatened or endangered; provides for adding species to and removing them from the list of threatened and endangered species, and for preparing and implementing plans for their recovery; provides for interagency cooperation to avoid take of listed species and for issuing permits for otherwise prohibited activities; provides for cooperation with States, including authorization of financial assistance;
    - **Purpose:** To prevent the extinction of endangered plants and animals and to recover their populations.

- **Clean Water Act (CWA):** The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

  Under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry. EPA has also developed national water quality criteria recommendations for pollutants in surface waters.
    - **Purpose:** To maintain the quality of the nation's waters.

~~7.0~~8.0 Annual Meeting

The Grantor and Holder agree to hold an Annual Meeting in order to facilitate effective communication and to ensure a shared understanding of the status of the forest condition as it relates to the mature forest and perennial stream management requirements. The Holder will be responsible for scheduling the meeting prior to March 30th each year. The Annual Meeting will report on the following:

1. Current Mature Forest Percentage
2. Mature Forest Percentage in Strategic Harvest Plan in 2065
3. Forest Health and Climate Change concerns – Observed/Anticipated
4. Holder monitoring activities and Findings for the previous year
5. Harvest activities – previous 12 months
6. Current planned harvest activities, subject to change – next 12 months
7. Perennial Stream Crossings
    a. Previous year – actual
    b. Current year – planned
8. Perennial Stream Mapping Review:
    a. Review of any natural stream channel movement over time of the 88 miles of perennial streams in BDR with corresponding GIS update.
9. Forest Management Activities within Mature Forest Buffers - Previous year and Current year planned
    a. 0-100 foot
    b. >100 to 330 foot

~~8.0~~9.0 Figures, Tables and Maps

~~8.1~~9.1 List of Figures and Maps

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~~8.2~~9.2 List of Tables

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Appendices

A. Conservation Easement
B. Definitions
C. Protected Property
D. Kennebec River Watershed Map
E. Soils Maps and Map Unit Details
F. Forest Management Roads and Landings
G. Best Management Practices (BMP) Standards
H. Forest Inventory Procedure and Design
~~H.~~I. MFS Chapter 21 Rules – SWS for Timber Harvesting in Shoreland Areas
~~I.~~J. Cold Stream Rights of Way Access

Appendix A: Conservation Easement

Appendix B: Definitions

Baseline Documentation Report: The present condition of the Protected Property, including its conservation values, natural features and attributes, existing development, structures, buildings, and improvements, and existing uses of and activities on the Protected Property.

Conservation Plan: the Plan required by the Permit Orders that has a primary goal of compensation for the fragmenting effect on habitat of the NECEC, and the related edge effect, by promoting habitat connectivity and conservation of mature forest areas within the Protected Property.

Confirmed and Potential Endangered, Threatened and Special Concern Species: Species that are listed as Endangered, Threatened or are of Special Concern, each as defined below, that the MDIFW or MNAP have identified as either being present or have a strong potential of being present. In Maine, definitions and classifications for species of conservation concern are outlined by the Maine Department of Inland Fisheries and Wildlife (MDIFW).

1. Endangered Species - these are species in danger of extinction throughout all or a significant portion of their range within Maine. They receive the highest level of legal protection under the Maine Endangered Species Act (MESA).

2. Threatened Species - These are species likely to become endangered in the foreseeable future throughout all or a significant portion of their range in Maine. They also receive legal protection under MESA.

3. Species of Special Concern - This category includes species that do not currently meet the criteria for endangered or threatened status, but are considered, particularly vulnerable, at risk of becoming endangered, threatened, or extirpated (locally extinct), facing threats such as restricted distribution, low or declining numbers, or specialized habitat needs. These species are not legally protected under MESA but are monitored closely. Some are further designated as Special Concern – RARE, which may make them eligible for regulatory review, though they still lack the full legal protections of endangered or threatened species.

Exemplary Natural Communities: Communities defined by the Maine Natural Areas Program (MNAP) as “Any occurrence of a natural community type that is rare statewide (i.e., ranked S1, S2, or S3), or an exemplary occurrence of a more common community type (ranked S4 or S5)."

Forest Management Activities: Management of the forestland resources on the Protected Property, including, without limitation, the planting, growing, cultivation, stocking, and cutting of trees and other forest products; timber cruising; resource evaluation; herbicide, pesticide, and fertilizer application; timber stand improvement; pruning, mechanical and conventional timber harvesting and other forest harvesting; forest products transportation; natural and artificial

regeneration of Forest Stands; and other substantially similar and associated activities; and the construction, creation, use, and maintenance of woods roads, land management roads, skid trails, and haul roads, turnouts, timber landings, and crossing of flowing waters for such purposes; and any other forest management use or activity allowed by then-current law, rule, or regulation. Forest Management Activities also include management of the forest for wildlife habitat, outdoor recreation, scientific study, educational activities, and efforts to prevent, respond to, mitigate the effects of wildfires, invasive species, and potential or incurred tree damage by disease and insects.

Forest Stand: A contiguous group of trees sufficiently uniform in age class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

Mature Forest Habitat: A Forest ~~Stands that achieve a minimum threshold of 50-foot-tall trees and~~stand consisting of a mix of native species with a minimum basal area of 80 square feet per acre of live trees at least 4.5 inches in diameter at breast height, including a minimum basal area of 60 square feet per acre of live trees at least 50 feet tall, accompanied by the presence of representative levels of well-distributed standing dead and downed trees as described and defined in the Conservation Easement in Section III and Section VII.A.6.

Normal High-Water Line: That line, which is apparent from visible markings, changes in the character of soils due to prolonged action of water or changes in vegetation, and which distinguishes between predominantly aquatic and predominantly terrestrial habitat. In the case of riparian wetlands that are immediately adjacent to streams and other water bodies, the normal high-water line is the upland edge of the wetland, not the edge of the open water within the stream corridor as described and defined in the Conservation Easement Definitions in Section III.

Perennial Streams: Those streams identified in the Baseline Documentation Report as having flowing water year-round except during extreme droughts, which are subject to Perennial Stream Buffers.

Perennial Stream Buffers: The No-Harvest Buffers and the Mature Forest Buffers on Perennial Streams (see details in Section VII.A.6 in the Conservation Easement).

Permit Orders: The May 11, 2020, Maine Department of Environmental Protection Findings of Fact and Order for the New England Clean Energy Connect project, as affirmed and modified by the July 21, 2022, Maine Board of Environmental Protection Findings of Fact and Order.

Productive Forest: Forest Stands that are currently capable of growing Mature Forest. Habitat Sites incapable of supporting 50-foot-tall trees and 60 square feet basal area per acre based upon site index are not considered productive forest.

Protected Property: Approximately 50,060 acres in the vicinity of Segment 1 subject to the Upper Kennebec Conservation Easement, which is located in Bradstreet Township, Johnson Mountain Township, Parlin Pond Township and West Forks Plantation as further identified in the Baseline Documentation Report.

Rare Plant Populations: Native Vascular plant species whose populations are highly vulnerable to loss within the state. These populations are defined and tracked by the Maine Natural Areas Program (MNAP).

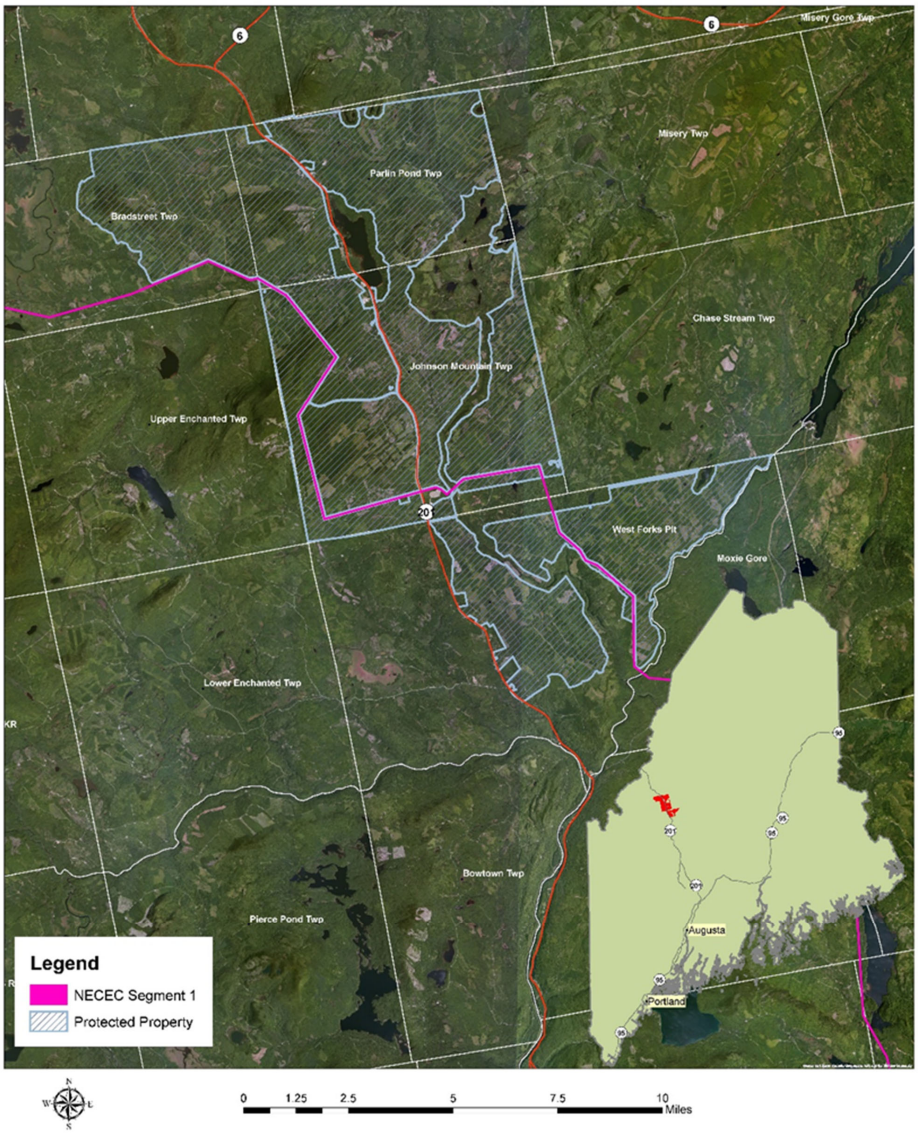
Riparian Wetlands: Wetlands located immediately adjacent to the banks of Perennial Streams.

Shifting Mosaic Forest Management: Over a larger landscape, harvesting that allows the types, sizes and age classes of tree species to constantly change over time and space. Shifting mosaic forest management principles include maintaining a variety of forest conditions and habitats, and considering how active management affects the landscape.

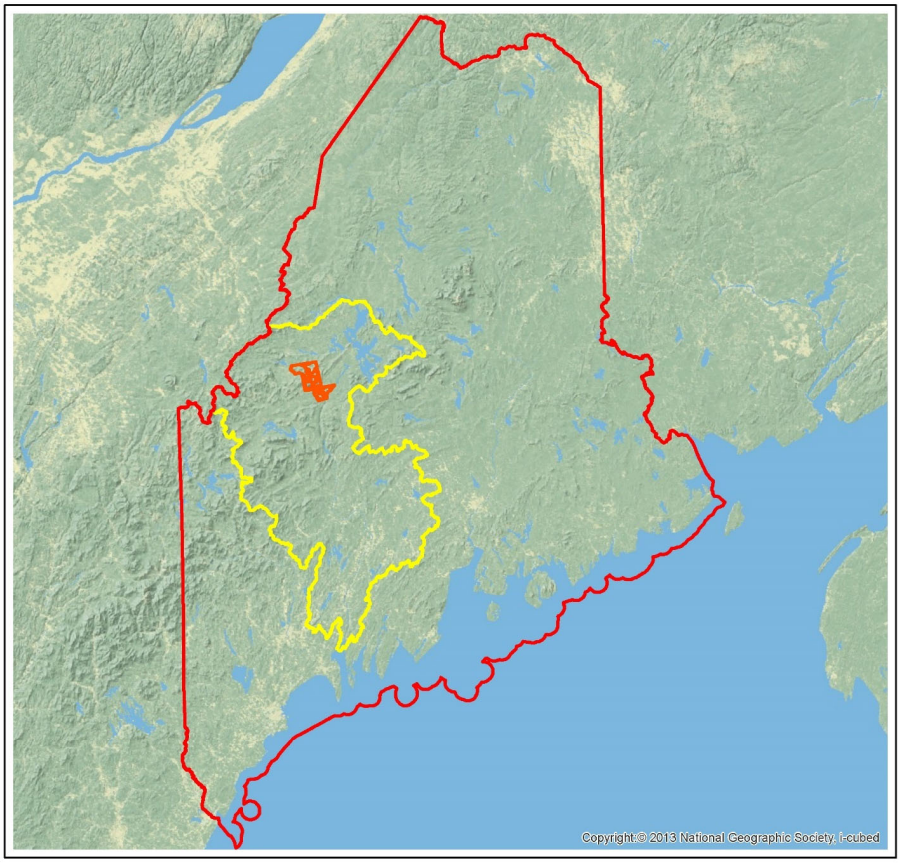
Timber harvesting: The cutting or removing of timber for the primary purpose of selling or processing forest products.

Well Distributed Coarse Woody Debris: Coarse Woody Debris refers to fallen dead trees, large branches, and logs that are left on the forest floor. These materials are considered "well distributed" when they are evenly spread across a forested area, rather than concentrated in piles or limited to certain zones.

Appendix C: Protected Property Map



Appendix D: Kennebec River Watershed Map



Legend

- State of Maine
- Kennebec River Watershed
- NECEC UKCE Footprint

N

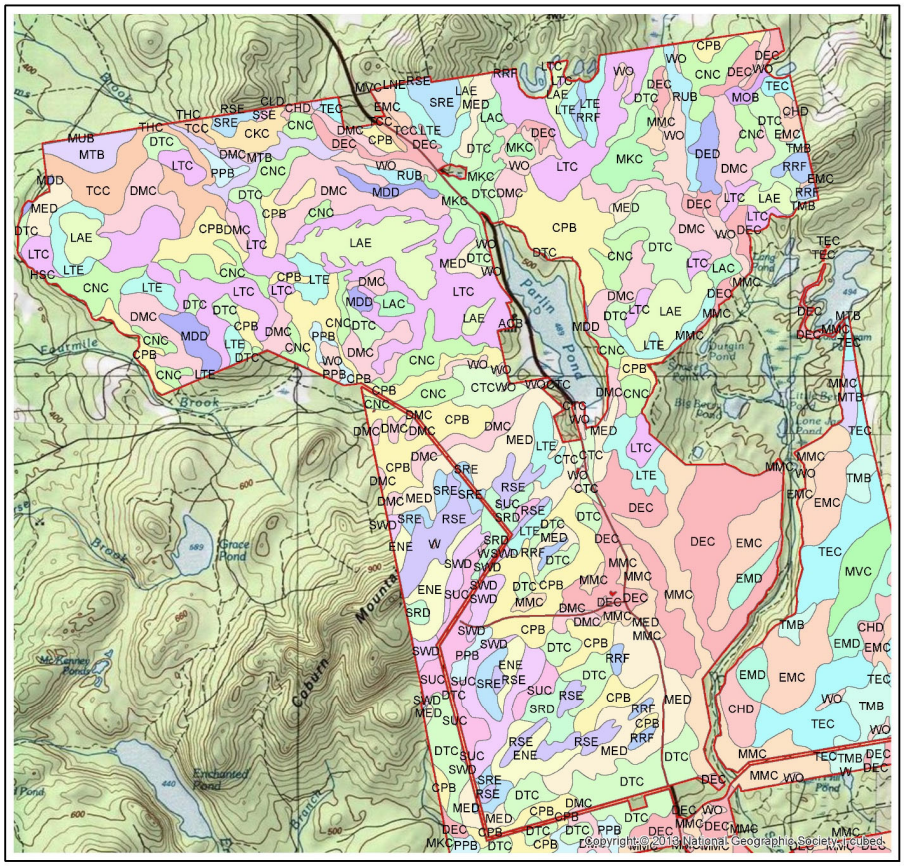
0 210,000 420,000 Feet

Note: Not a Survey Map

Weyerhaeuser

Appendix E: Soils Maps and Map Unit Details

NRCS Soils Map - North Half
NECEC Upper Kennebec CE - Protected Property



Legend

NECEC UKCE Footprint

USA Topo Maps

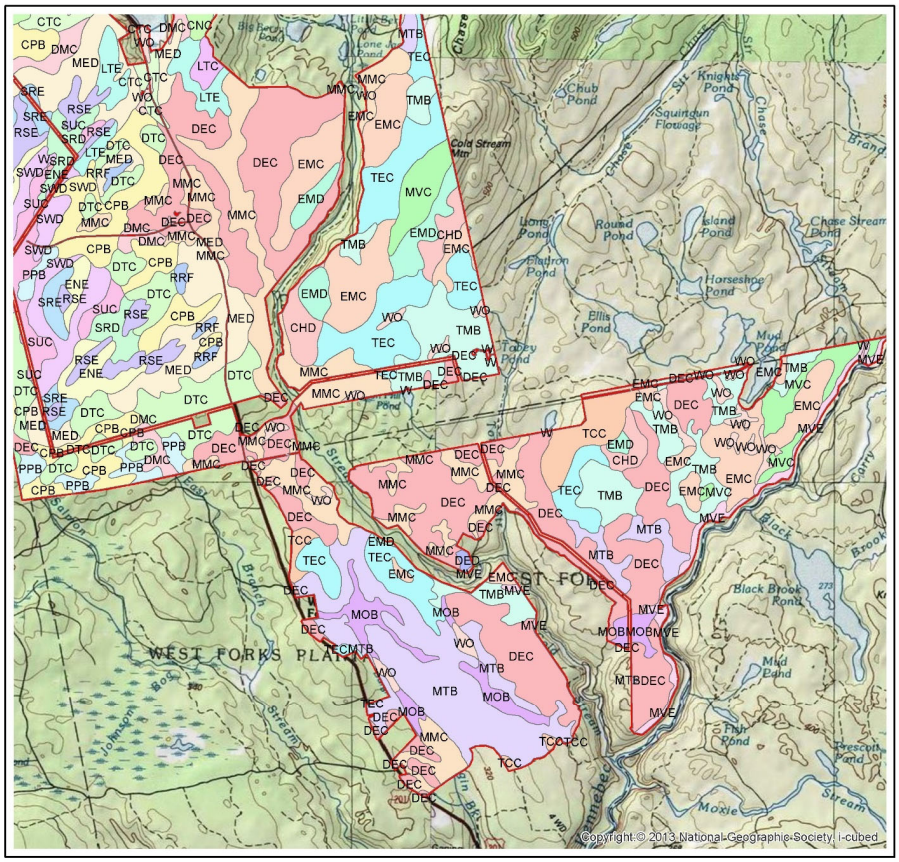
N

0 7,000 14,000 Feet

Note: Not a Survey Map

Weyerhaeuser

NRCS Soils Map - South Half
NECEC Upper Kennebec CE - Protected Property



Legend

NECEC UKCE Footprint

USA Topo Maps

N

0 7,000 14,000 Feet

Note: Not a Survey Map

Weyerhaeuser

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CLD	Chesuncook-Telos association, 15 to 35 percent slopes, very stony	0.3	0.0%
ECC	Chesuncook-Elliottsville-Telos association, 3 to 15 percent slopes, very stony	0.1	0.0%
LNE	Lyman-Tunbridge-Abram complex, 15 to 35 percent slopes, rocky	1.1	0.0%
MUB	Monarda-Telos complex, 0 to 8 percent slopes, very stony	3.1	0.0%
MVC	Monson-Elliottsville-Telos complex, 3 to 15 percent slopes, very stony	1.0	0.0%
RSE	Ricker-Saddleback association, very steep	6.0	0.0%
SAE	Saddleback-Mahoosuc-Sisk association, very steep, very stony	0.1	0.0%
THC	Telos-Chesuncook association, 3 to 15 percent slopes, very stony	1.4	0.0%
Subtotals for Soil Survey Area		**12.9**	**0.0%**
Totals for Area of Interest		**50,062.3**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ACB	Adams-Croghan association, 0 to 8 percent slopes	2.0	0.0%
CHD	Chesuncook-Elliottsville-Telos association, 15 to 35 percent slopes, very stony	541.3	1.1%
CKC	Chesuncook-Telos association, 15 to 35 percent slopes, very stony	197.9	0.4%
CNC	Colonel-Peru-Pillsbury association, 3 to 15 percent slopes, very stony	1,935.4	3.9%
CPB	Colonel-Pillsbury-Peru association, 0 to 8 percent slopes, very stony	3,799.2	7.6%
CTC	Colton-Adams complex, 3 to 15 percent slopes	318.0	0.6%
CVC	Colton-Hermon association, 5 to 15 percent slopes	0.9	0.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DEC	Danforth-Elliottsville association, 3 to 15 percent slopes, extremely stony	6,533.0	13.0%
DED	Danforth-Elliottsville association, 15 to 30 percent slopes, extremely stony	176.2	0.4%
DMC	Peru-Colonel-Marlow association, 3 to 15 percent slopes, very stony	3,140.6	6.3%
DTC	Peru-Colonel-Rawsonville association, 3 to 15 percent slopes	3,057.1	6.1%
EMC	Elliottsville-Monson complex, 3 to 15 percent slopes, very stony	2,260.3	4.5%
EMD	Elliottsville-Monson complex, 15 to 30 percent slopes, very stony	514.5	1.0%
ENE	Enchanted-Mahoosuc association, 30 to 80 percent slopes	627.0	1.3%
HSC	Hermon-Skerry association, 0 to 15 percent slopes, extremely stony	0.0	0.0%
LAC	Hogback-Abram complex, 4 to 25 percent slopes	207.3	0.4%
LAE	Hogback-Abram complex, 15 to 60 percent slopes	1,480.5	3.0%
LTC	Hogback-Rawsonville complex, 4 to 25 percent slopes	3,294.3	6.6%
LTE	Hogback-Rawsonville complex, 20 to 60 percent slopes	1,379.5	2.8%
MDD	Marlow-Peru association, 15 to 35 percent slopes, very stony	319.1	0.6%
MED	Marlow-Peru-Rawsonville association, 12 to 30 percent slopes	2,180.2	4.4%
MKC	Masardis-Adams complex, 3 to 15 percent slopes	631.1	1.3%
MMC	Masardis-Danforth-Peacham association, 0 to 15 percent slopes, extremely stony	2,657.7	5.3%
MOB	Monarda-Burnham complex, 0 to 3 percent slopes, very stony	622.3	1.2%
MTB	Monarda-Telos complex, 0 to 8 percent slopes, very stony	2,794.9	5.6%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MVC	Monson-Elliottsville-Knob Lock complex, 8 to 30 percent slopes, very rocky	674.6	1.3%
MVE	Monson-Elliottsville-Knob Lock complex, 30 to 60 percent slopes, very rocky	271.3	0.5%
PPB	Pillsbury-Peacham association, 0 to 8 percent slopes, very stony	477.4	1.0%
RRF	Ricker-Rock outcrop complex, 3 to 80 percent slopes	272.0	0.5%
RSE	Ricker-Saddleback-Rock outcrop complex, 20 to 60 percent slopes	792.3	1.6%
RUB	Roundabout-Croghan association, 0 to 8 percent slopes	232.0	0.5%
SRD	Saddleback-Ricker complex, 10 to 50 percent slopes	396.3	0.8%
SRE	Saddleback-Ricker complex, 25 to 60 percent slopes	632.6	1.3%
SSE	Saddleback-Sisk-Rock outcrop association, 20 to 45 percent slopes	11.4	0.0%
SUC	Surplus-Bemis association, 5 to 15 percent slopes	524.4	1.0%
SWD	Surplus-Sisk association, 12 to 30 percent slopes	734.6	1.5%
TCC	Telos-Chesuncook association, 3 to 15 percent slopes, very stony	1,237.1	2.5%
TEC	Telos-Chesuncook-Elliottsville association, 3 to 15 percent slopes, very stony	2,087.2	4.2%
TMB	Telos-Monarda-Monson association, 0 to 8 percent slopes, rocky	1,867.1	3.7%
W	Water bodies	16.3	0.0%
WO	Bucksport and Wonsqueak mucks, 0 to 2 percent slopes	1,152.1	2.3%
Subtotals for Soil Survey Area		**50,048.7**	**100.0%**
Totals for Area of Interest		**50,062.3**	**100.0%**

Appendix F: Forest Management Roads & Landings on Protected Property

Appendix G: Best Management Practices (BMP) Standards

Appendix H: Forest Inventory Procedure & Design

Strata Design

To quantify the amount of mature forest on the Protected Property in 2025, the forest inventory procedure and design description below were used by Weyerhaeuser to estimate the mature forest area.

The inventory was derived through a two stage strata level estimate where existing 2016 LIDAR flights were used to derive strata assignment to each stand within the Protected Property along with stand history and NAIP imagery.

LIDAR statistics ranging from average, median, standard deviation, and 10 ft height class tabulated stand statistics were used to determine the size density matrix (stand class) for the strata. ESRIs Spatial Analyst Tool Zonal Toolbox's Tabulate Area and Zonal Statistics as Table was used to assign these statistics at the stand level to the productive portion of the stand.

Stand history, LIDAR intensity returns, and NAIP imagery were used to determine the covertype of each stand. The FMP describes the covertypes within the Protected Property.

Each stand was assigned a covertype and a stand class. These covertype and stand classes will be grouped into 'like' types. These like types will be the strata. The strata is what is sampled.

A portion of each strata is sampled at the stand level. A stand lister is selected to install forest inventory plots. Stands are sampled to make field cruise operations more efficient. Enough stands are selected and enough plots installed to get a statistically viable sample for the Protected Property.

Once the stands are selected for sample the following sampling plot procedure is followed.

Sampling Plot Procedure

Stand Designation

Weyerhaeuser will provide to the contractor a map, a stand list, and a plot list of designated plots to be cruised. The Map, Stand, & Plot List, defines all stands and plots to be cruised. Weyerhaeuser will provide all plot locations through a shapefile or table of X/Y plot locations. All spatial data will be passed from Weyerhaeuser to Contractor in the WGS 84 or NAD 83 UTM 19N meters projection format.

Plot Placement

Plots must be taken at designated X/Y coordinates defined by the Plot Allocation Table or shape file provided in the data transfer. Plots shall be a minimum of 33 feet perpendicular from any road right-of-way or stand boundary.

Plots must fall within ½ chain (33 ft) of the submitted X/Y plot location as measured by the check cruiser. Adjust for the changing slopes between plots on the line of travel to consistently place plots at the desired grid distance.

If a plot must be offset due to nearness to stand boundary or road ROW record the offset on the plot tally and on the witness flagging. Offset distance and direction must be recorded on the witness flagging at designated X/Y in the "Allocation Table". Offset plots in full ½ chain increments into the stand being cruised perpendicular to the road or stand line encountered. Hang flagging with offset distance and bearing at road edge or stand line at designated X/Y in the Plot Allocation Table.

Variable Radius Point Offset Method – Visually estimate the largest tree (dbh) in the vicinity of the offset. If greater than 36" offset 2 chains, if greater than 24" offset 1 ½ chains, if greater than 12" offset 1 chain, and if less than 12" offset ½ a chain from the hard boundary of the road edge or stand line.

Fixed Plot Offset Method – Offset plot in full ½ chain increments to prevent plot boundary from intersecting line or ROW being offset.

Sampling Methods

Sample trees shall be selected at each plot/point using the following methods:

10BAF - Variable Radius Point - Sample trees are selected using a 10 BAF glass prism or angle gauge. Sample trees shall have a Diameter at Breast Height (dbh) equal to or larger than the defined Minimum Main Plot dbh. Sample tree's midpoint at dbh must be within the limiting distance as defined by the dbh class to the 1/10th inch class in the limiting distance chart attached. Tree dbh will be measured with a steel diameter tape at the time of auditing.

If the average tree count on the 10 BAF Radius Point exceeds 10 trees per plot a 15 or 20 BAF sample may be used in place of the 10 BAF prism. A 10, 15, or 20 BAF prism sample may be used to ensure an average of 8-10 trees in the **main** plot per stand.

Install nested regeneration plot with a 1/100th acre fixed radius plot and sample trees with a diameter at Breast Height (dbh) equal to or larger than the defined Minimum Nested Plot dbh in Exhibit D and less than the Minimum Main Plot dbh. The nested plot will utilize a defined **11.78 feet** fixed length radius. The nested plot and main plot share the same plot center.

FIXED 40 - Fixed Area Radius Plot - Plot where species and size data shall be collected on trees with dbh equal to or larger than the defined Minimum Main Plot dbh. Sample tree's midpoint at dbh must be within the defined plot radius to be sampled. This plot will utilize a defined **18.62 feet** fixed length radius.

Install nested regeneration plot with a 1/100th acre fixed radius plot and sample trees with a diameter at Breast Height (dbh) equal to or larger than the defined Minimum Nested Plot dbh in Exhibit D and less than the Minimum Main Plot dbh. The nested plot will utilize a defined **11.78 feet** fixed length radius. The nested plot and main plot share the same plot center.

Plot / Point Type – The size of the variable radius point or fixed area plot will be defined at the stand # level in the "Maps and List".

Sample Plot Procedures

The following standards apply. Refer to the Plot Record Example for the complete list of fields being collected. Refer to the Species Code Table, Plot Size / BAF, and Product Code Tables for the correct codes to use in the plot record. Refer to Exhibit A Plot Allocation table for correct standkey plot number combinations and locations.

Plot Record Example:

(Add)me or User Name	Tract Name	Stand #	Stand Acres	Plot #	Tree #	Tree Count	Species Code	Product Code	DBH Class	Merch Ht	Total Ht	HtToLiveCrown	Cruise Date	Plot Size/BAF
	WalterAspen2	1995003441	1	1	1	1	ASQ	Pwd	8	0	55	30	12/19/2015	BAF10NA

Stand Information

Required information for each stand sampled includes:

1. **Stand #** – The "Allocation Table" will describe the proper identification coding.
2. **TractName** – Project Name
3. **Contractor Name or User Name** - Name of individual cruiser tallying the plot.
4. **Cruise Date** of plot field sampling (first day when sampling occurs over multiple days.)
5. **Plot Size/BAF –** Plot size and configuration
    a. **FIXED 40** – Fixed area 1/40th acre radius plot (18.62' radius)
    b. **BAF10** – Variable radius point sample 2.75 prf 10 BAF

Plot Identification

Required information for each plot sampled includes:

1. **Plot Number** – described below.

2. Offset Plots need to have offset length and direction of offset on plot data and/or flagging in woods.

Plot identification shall utilize a numerical sequence for all plots placed in a stand defined in the Plot Allocation Table. Weyerhaeuser will assign the plot numbers.

Plot centers on cruise plots shall be marked with flagging tied to a stake, a wire flag, or a flag shoved in the ground. Wire flag must be used if snow is on the ground. If flagging shoved in ground flagging extending from ground plot center must be 2.5' long at minimum and flagging must be firmly in ground. The plot center is where the stake, flag, or flagging enters the ground.

'Witness Flags' shall also be attached to a tree limb near plot center to aid in location. This witness flag shall be at least 3 feet long, as measured from the knot to the longest end, and shall be attached at eye level within 10 feet of plot center. In stands where eye-level stems do not exist within the 10-foot limit, attach one 3-foot or longer Witness Flag on a shrub or tree stem at least 3 feet high nearest the plot center, and two other 3-foot Witness Flags on the nearest tree or shrub stems at eye-height. It is permissible to place one Witness Flag on the tree to be measured on the plot nearest plot center when eye-level stems do not exist near plot center. If the plot is a "No Tally" plot, using the first eye-level stem along the travel route is permissible. This Witness Flag shall include the direction and approximate distance back to "No Tally" plot center, and direction and distance to the next plot. The color(s) of ribbon shall be as specified in the "Cruise Definitions" or in writing by the contract administrator.

Write the plot number, the cruiser initials, and date on the Witness Flag with a ***permanent-ink*** marker. The ink color for the marker shall contrast with the colors used in the ribbon.

Tree Data – All plots

All live trees with a dbh equal to or greater than the minimum main plot dbh. The first tree on the plot will be flagged or a vertical line placed on the tree. Fixed radius and BAF plot tree identification will continue in a clockwise sequence from the first measured tree. Fixed strip plot tree identification will continue in a zig zag pattern back to plot center from the first tree. The last tree on the first side of the strip will have a '1' entered in the comments of the tree record.

All plot radius, plot lengths, and limiting distance measurements are adjusted for slope to horizontal distance.

Required information for each sample tree:

1. **Tree #** – Number assigned to tree in sequence tallying clockwise from the first north tree.
2. **Species Code** – See "Species Code Table"
3. **Product Code** – See "Product Code Table.

4. **DBH** to nearest 1-inch class. For example, the 5-inch class will range from 4.6 to 5.59 inches.
5. **Merchantable or Stopper Height (MHt)** - Record to nearest ½ log in trees where highest product is limited due to defect or small end diameter inside bark. Regeneration and Cull products are to be recorded as a '0' merchantable height. Only broken top trees and trees with severe crook require the cruiser to enter a merchantable height call for pulpwood trees. All sawbolt and sawlog trees require the cruiser to enter a merchantable height call. Acceptable codes = 0, 1.0, 1.5, 2.0, 2.5, etc.
6. **Tree Count** – Number of trees with the same species, product, merchantable height, and total height combination. In most instances this will be recorded as '1' for 5"+ dbh trees. Having a tree count of greater than 1 is acceptable.
7. Each tree with a dbh class of 5"+ will be a single record in the tally sheet.
8. Trees with a fork below dbh will be tallied as two separate trees.
9. Trees which fork immediately above dbh will be tallied as one tree with the product calls being made only on the dominant stem.
10. Mark all "In" trees with a paint stick with a horizontal line at dbh and facing towards the plot center.
11. Trees measured for limiting distance and determined to be "Out" shall have an "X" marked on the tree at DBH and facing towards plot center.

All borderline trees shall be measured from the 'Center of the Tree' at the measured dbh and all distances shall be Horizontal (slope correction shall be applied as appropriate). Identifying the Limiting Distance point for all borderline trees using paint sticks or lumber crayons is encouraged. A horizontal line may be placed to show where DBH was measured with a vertical line crossing it to show the Center of the Tree. All trees determined to be borderline by the check cruiser will be verified using this mark when such trees are so marked.

Limiting distances for prism plot trees shall be computed using the measured dbh to the 1/10-inch times the Plot radius factor (PRF) for the prism or BAF being used. See Limiting Distance Chart. The dbh used to determine the limiting distance shall be the taped dbh as defined by the check cruiser. Limiting distances shall be computed using the DBH measured. If DBH measurement was moved up or down the stem due to stem irregularity limiting distance will be computed using the marked dbh.

Limiting distance for fixed plot radius trees shall use the defined Fixed Plot Size radius. The horizontal distance must be equal to or less than the Fixed Plot Size radius from the 'Center of the Tree' at measured dbh to plot center.

Tree Data - Total Height Trees

At least 7 trees per Predominant (top 3) species and 5 trees every other species across three different diameter classes greater than or equal to 5" dbh class need THt measurement in each stand. These trees should be selected across all plots in the stand as evenly distributed as

possible. If 7/5 trees per species are not obtainable in dbh classes equal to or greater than 5" trees less than 5" should be measured for total height to get tree count per species. Do not go off plot to obtain total height trees.

In addition to the data required for all plots above:

1. **Total Tree Height (THt)** - Record the total height (feet) for all trees in the plot to the tip of the tree. Trees should be measured to the highest tip of the tree live or dead.
2. If a fork crotch occurs at or above 4.5 feet on the high ground side the tree is treated as a single tree. Measure the height of the best fork.
3. If a tree is leaning total height is the true bole length from the high side of the stump to the tip of the tree.
4. **Height To Live Crown (HtToLiveCrown)** – Live Crown Base is defined below. Height to Live Crown is the length from the base of the tree to the Live Crown Base. All THt trees need a HtToLiveCrown measure and tally.

Cruise Compilation

After the plots are collected the inventory will be calculated at the stand level using the correct plot size/scale to expand the tree list into a stand level estimate using productive acres. As stated in the FMP the tree list will contain species, product, dbh class, total height, trees per acre, and basal area.

These stand level estimates will then be expanded into strata level estimates based on the strata assignment of the stand. This expansion could be based on just an average of the stand level estimates sampled or if acres are used in the stand selection process for sampling the acres will be used in the ratioing of the strata estimate from the cruised stands.

As noted in the sampling plot procedure only a subsample of total heights are collected in the sample. These sampled total heights will be used in a regression at the stand species dbh class level that takes the form below to calculate all total heights.

Total Height = EXP (b0 +b1/dbh)

The imputed coefficients of the regression will be used to calculate the total height for every dbh class by species. This regressed height is stored at the species and dbh class level for each stand sampled.

After the expansion of the strata level estimate to each stand the productive acres in each stand can be used in the mature forest monitoring and milestone process at each 10-year interval.

Appendix ~~H~~I: MFS Chapter 21 Rules – SWS for Timber Harvesting in Shoreland Areas

Appendix H: Cold Stream Rights of Way Access