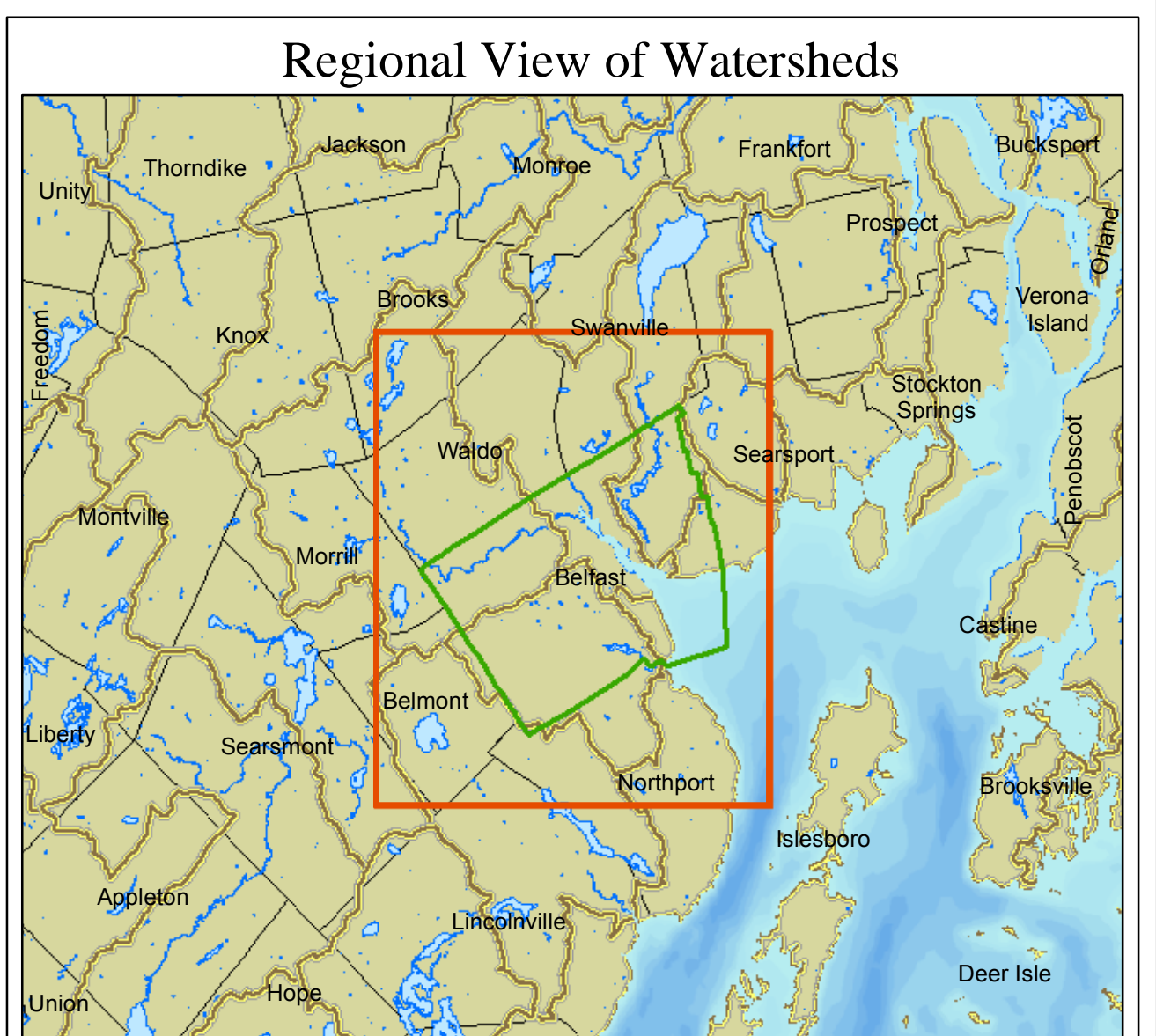


LEGEND

This map depicts riparian areas associated with major surface water features and important public water resources. This map does not depict all streams or wetlands known to occur on the landscape and should not be used as a substitute for on the ground surveys. This map should be used as a planning reference only and is intended to illustrate the natural hydrologic connections between surface water features. Protecting riparian habitats protects water quality, maintains habitat connections, and safeguards important economic resources including recreational and commercial fisheries.

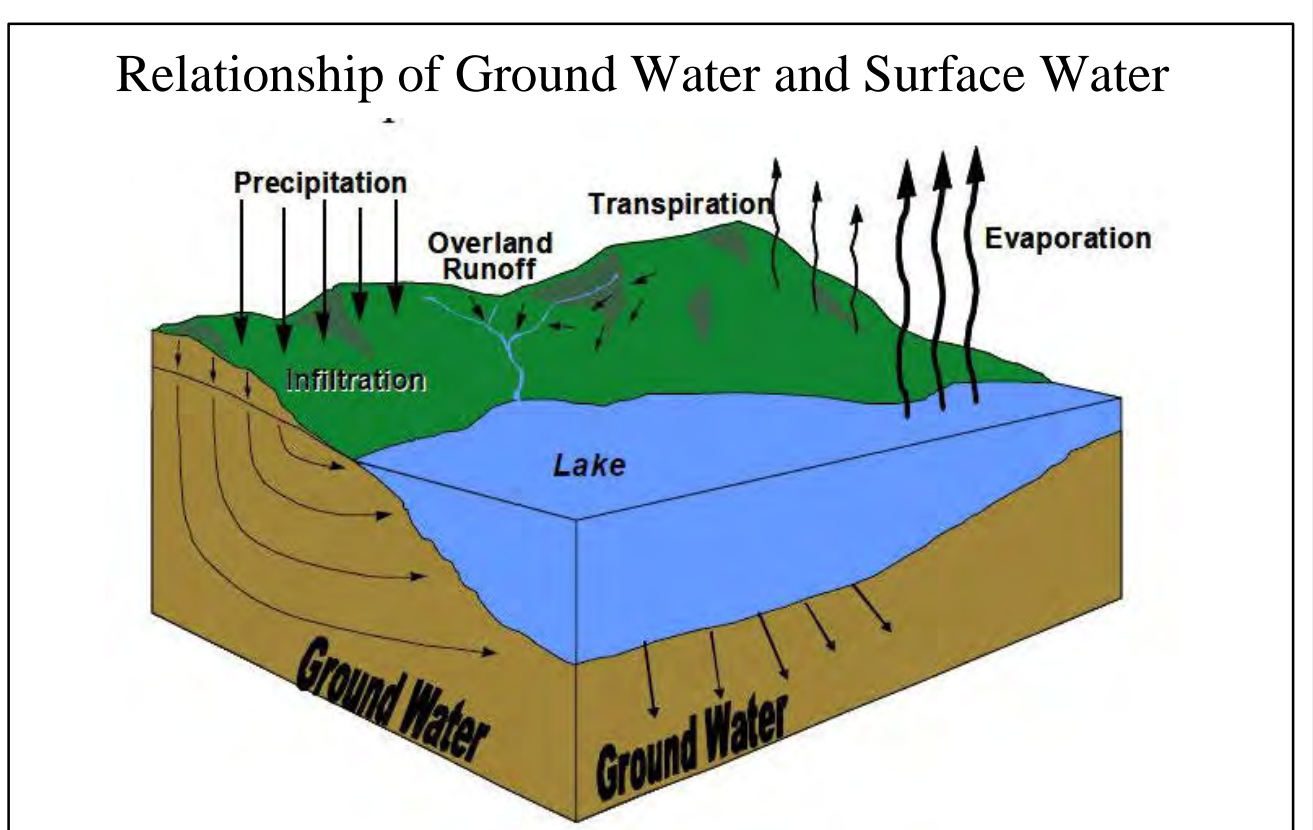
- Selected Town or Area** (Green outline)
- Organized Township Boundary** (Black dashed line)
- Unorganized Township** (Yellow dashed line)
- Developed** - Impervious surfaces including buildings and roads (Black solid line)
- Drainage divides** - These are the smallest hydrologic units mapped in Maine. They contain watershed boundaries for most ponds and rivers in Maine. (Yellow solid line)
- NWI Wetlands** - National Wetlands Inventory (NWI) uses aerial photographs to approximate wetland locations. NWI data is not a comprehensive mapping of wetland resources and typically under represents the presence of wetlands on the landscape. The presence of wetlands needs to be determined in the field prior to conducting activities that could result in wetland disturbance. (Blue solid area)
- Riparian Habitat** - depicted using common regulatory zones including a 250-foot-wide strip around Great Ponds (ponds ≥ 10 acres), rivers, coastline, and wetlands ≥ 10 acres and a 75-foot-wide strip around streams. Riparian areas depicted on this map may already be affected by existing land uses. (Pink solid area)
- Shellfish Growing Areas** - The Maine Department of Marine Resources maps growing areas for economically important shellfish resources. This map depicts softshell and hard clam resources in order to illustrate the relation of these resources to streams and shoreline areas vital to their conservation. (Orange solid area)
- Brook Trout Habitat** - Streams and ponds, buffered to 100 feet, where wild Brook Trout populations have been documented, or managed to enhance local fisheries. (Red hatched area)
- Public Water Supply Wells** (Blue circle with crosshair)
- Source protection area** - Buffers that represent source water protection areas for wells and surface water intakes that serve the public water supply. Their size is proportional to population served and/or by the type of water supply system. These buffers range from 300 to 2,500 feet in radius. (Blue solid area)
- Aquifers** - flow of at least 10 gallons per minute (Green solid area)



A watershed includes all of the land that drains to a common waterbody. The areas within the watershed are linked ecologically by the water, sediment, nutrients, and pollutants that flow through them. For the purpose of mapping "hydrological units," watersheds are often grouped into larger drainages or divided into smaller ones depending on the map's scale. Drainage divides (shown on main map as yellow lines), are the smallest hydrological units and generally drain into small ponds, wetlands, or streams. These units are grouped into subwatersheds (HU12) and are represented on the inset map above by the yellow-brown outlines.

- Main Map Extent** (Red outline)
- Selected Town or Area** (Green outline)
- Subwatersheds** (Yellow outline)

1 inch = 4 miles



Precipitation is the source of all water. Surface water and ground water are related. Drinking water can come from either source. Ground contaminants can affect both. The relationship between ground water and surface water is part of the **hydrologic cycle**. **Precipitation** that falls from the atmosphere as rain or snow reaches the land surface and recharges rivers, lakes, wetlands, and other surface bodies of water directly through **overland runoff**. Surface water also seeps into the ground through **infiltration** and eventually reaches the ground water, or through **evaporation**, returns to the atmosphere. Water evaporates from leaves and stems of plants through **transpiration**.

Shoreland Zoning

Maine's Mandatory Shoreland Zoning Act is intended to protect water quality, conserve wildlife habitat, and preserve the natural beauty of Maine's shoreline areas. Successful implementation requires local awareness of and appreciation for surface water resources and effective enforcement of setback and buffer requirements.

At a minimum, Maine's shoreland zones include all land within:

- 250 feet of the high-water line of any pond over 10 acres, any river that drains at least 25 square miles, and all tidal waters and saltwater marshes;
- 250 feet of a freshwater wetland over 10 acres (except "forested" wetlands); and
- 75 feet of a stream that is either an outlet stream of a great pond, or located below the confluence of two perennial streams as depicted on a USGS topographic map.

Shoreland zoning encourages towns to provide greater protection to their local water resources by applying shoreland zone protections to additional resource types such as smaller streams and wetlands, and rare terrestrial features. For specific guidance regarding Maine's Mandatory Shoreland Zoning Act contact the Dept. of Environmental Protection Shoreland Zoning Unit: 207-287-3901 (Augusta), 207-822-6300 (Portland), 207-941-4116 (Bangor), www.maine.gov/dep/biwa/docstand/szpage.htm

Data Sources

DATA SOURCE INFORMATION	SHELLFISH
TOWNSHIP BOUNDARIES Maine Office of GIS (2013); metwp24	Maine Department of Marine Resources; softshell_claims_hard_clams
ROADS Maine Office of GIS, Maine Department of Transportation (2015); medotpub	RIPIANIAN BUFFERS Maine Office of GIS, Maine Natural Areas Program (2011)
HYDROLOGY USGS National Hydrography Dataset (NHD) Maine (2012)	WELLS, WELL BUFFERS Maine Office of GIS, Maine Department of Human Services-Drinking Water Program (2011); wells_wellbuf
DEVELOPED Maine Office of GIS, Maine Department of Inland Fisheries and Wildlife (2015); impervious_change_2015	AQUIFERS Maine Office of GIS, Maine Geological Survey (2011); aquifer_polygons
NATIONAL WETLANDS INVENTORY U.S. Fish & Wildlife Service (2015); NWI	DRAINAGE DIVIDES Maine Office of GIS (1994); medrwd
	BROOK TROUT HABITAT Maine Department of Inland Fisheries & Wildlife (2011)

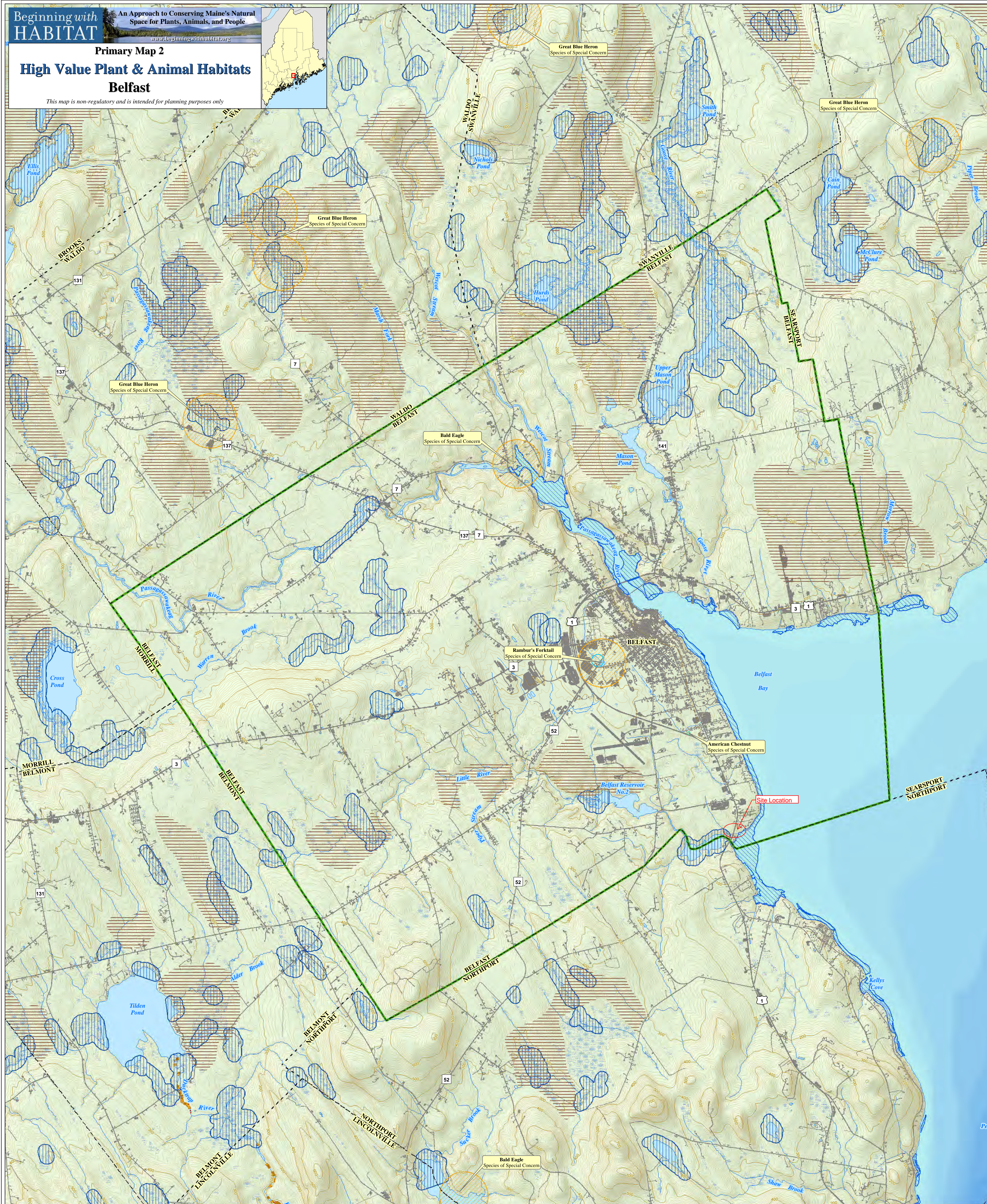
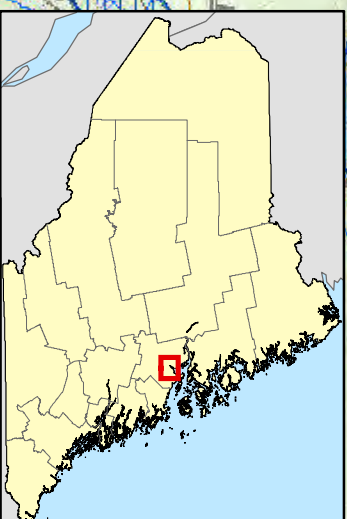
DATA SOURCE CONTACT INFORMATION

Maine Office of GIS: <http://www.maine.gov/mgis/>
 Maine Natural Areas Program: <http://www.maine.gov/dacimnap/index.html>
 Maine Department of Marine Resources: <http://www.maine.gov/dmr/>
 Maine Department of Transportation: <http://www.maine.gov/mot/>
 Maine Geological Survey: <http://www.maine.gov/doc/mgs/mgs.htm>
 Maine Department of Inland Fisheries & Wildlife: <http://www.maine.gov/wildlife/index.html>

DIGITAL DATA REQUEST
 To request digital data for a town or organization, please visit our website: http://www.beginningwithhabitat.org/the_mappings_data_request.html

Primary Map 2
High Value Plant & Animal Habitats
Belfast

This map is non-regulatory and is intended for planning purposes only



LEGEND

Beginning with Habitat (BwH) is a voluntary tool intended to assist landowners, resource managers, planners, and municipalities in identifying and making informed decisions about areas of potential natural resource concern. This data includes the best available information provided through BwH's coalition partners as of the map date, and is intended for information purposes only. It should not be interpreted as a comprehensive analysis of plant and animal occurrences or other local resources, but rather as an initial screen to flag areas where agency consultation may be appropriate. Habitat data sets are updated continuously as more accurate and current data becomes available. However, as many areas have not been completely surveyed, features may be present that are not yet mapped, and the boundaries of some depicted features may need to be revised. Local knowledge is critical in providing accurate data. If errors are noted in the current depiction of resources, please contact our office. Some habitat features depicted on this map are regulated by the State of Maine through the Maine Endangered Species Act (Essential Habitats and threatened and endangered species occurrences) and Natural Resources Protection Act (Significant Wildlife Habitat). We recommend consultation with MDIFW Regional Biologists or MNPAP Ecologists if activities are proposed within resource areas depicted on this map. Consultation early in the planning process usually helps to resolve regulatory concerns and minimize agency review time. For MDIFW and MNPAP contact information, visit <http://www.beginningwithhabitat.org/contacts/index.html>.

- Organized Township Boundary
- Unorganized Township
- Selected Town or Area of Interest
- Developed: Impervious surfaces such as buildings and roads

Rare, Threatened, or Endangered Wildlife

- Known rare, threatened, or endangered species occurrence and/or the associated habitats based on species sightings.

Consult with an MDIFW regional biologist to determine the relative importance and conservation needs of the specific location and supporting habitat. The names of some species have been masked with a "Rare Animal" designation on the map for further protection. For more information regarding individual species visit our website: http://www.maine.gov/fw/wildlife/endangered/listed_species_me.htm, for species specific fact sheets.

The Federal Endangered Species Act requires actions authorized, funded, or carried out by federal agencies be reviewed by the U. S. Fish and Wildlife Service. If your project occurs near an occurrence of the Atlantic Salmon, Roseate Tern, Piping Plover, Canada Lynx, New England Cottontail, Furbish's Lousewort, or Small-whorled Pagnonia contact the Maine Field Office, USFWS, 1168 Main St., Old Town, ME 04468.

Rare or Exemplary Plants and Natural Communities

- Rare Plant Locations

Known rare, threatened, or endangered plant occurrences are based on field observations. The names of some species have been masked with a "Rare Plant" designation on the map for further protection. Consult with a Maine Natural Areas Program (MNPAP) Ecologist to determine conservation needs of particular species. For more information regarding rare plants the complete list of tracked species and fact sheets for those species can be found at: <http://www.maine.gov/doc/nr/mc/mnap/features/plantlist.htm>

- Rare or Exemplary Natural Community Locations

The MNPAP has classified and distinguished 98 different natural community types that collectively cover the state's landscape. These include such habitats as floodplain forests, coastal bogs, alpine summits, and many others. Each type is assigned a rarity rank of 1 (rare) through 5 (common). Mapped rare natural communities or ecosystems, or exemplary examples of common natural communities or ecosystems, are based on field surveys and aerial photo interpretation. Consult with an MNPAP Ecologist to determine conservation needs of particular communities or ecosystems.

Essential Wildlife Habitats

- Roseate Tern Nesting Area or Piping Plover-Least Tern Nesting, Feeding, & Brood-Rearing Area

Maine's Department of Inland Fisheries & Wildlife (MDIFW, www.state.me.us/fw) maps areas currently or historically providing habitat essential to the conservation of endangered or threatened species as directed by the Maine Endangered Species Act (12 M.R.S.A., Chapter 925, Subchapter 3, Sections 12804 and 12806) and regulations (MDIFW Rules, Chapter 8.05). Identification of Essential Habitat areas is based on species observations and confirmed habitat use. If a project occurs partly or wholly within an Essential Habitat, it must be evaluated by MDIFW before state and/or municipal permits can be approved or project activities can take place.

Significant Wildlife Habitats

- Candidate Deer Wintering Area
Forested area possibly used by deer for shelter during periods of deep snow and cold temperatures. Assessing the current value of a deer wintering area requires on-site investigation and verification by IF&W staff. Locations depicted should be considered as approximate only.
- Inland Waterfowl / Wading Bird
Freshwater breeding, migration/staging, and wintering habitats for inland waterfowl or breeding, feeding, loafing, migration, or roosting habitats for inland wading birds.
- Seabird Nesting Island
An island, ledge, or portion thereof in tidal waters with documented, nesting seabirds or suitable nesting habitat for endangered seabirds.
- Shorebird Areas
Coastal staging areas that provide feeding habitat like tidal mud flats or roosting habitat like gravel bars or sand spits for migrating shorebirds
- Tidal Waterfowl / Wading Bird
Breeding, migrating/staging, or wintering areas for coastal waterfowl or breeding, feeding, loafing, migrating, or roosting areas for coastal wading birds. Tidal Waterfowl/Wading Bird habitats include aquatic beds, eelgrass, emergent wetlands, mudflats, seaweed communities, and reefs.
- Significant Vernal Pools
A pool depression used for breeding by amphibians and other indicator species and that portion of the critical terrestrial habitat within 250 ft of the spring or fall high water mark. A vernal pool must have the following characteristics: natural origin, nonpermanently hydroperiod, lack permanently flowing inlet or outlet, and lack predatory fish.

Maine's Natural Resources Protection Act

Maine's Natural Resources Protection Act (NRPA, 1988) is administered by the Maine Department of Environmental Protection (MDEP; <http://www.maine.gov/dep/blwq/docland/nrpapage.htm>) and is intended to prevent further degradation and loss of natural resources in the state, including the above Significant Wildlife Habitats that have been mapped by MDIFW. MDEP has regulatory authority over most Significant Wildlife Habitat types. The regional MDEP office should be consulted when considering a project in these areas.

Atlantic Salmon Spawning/Rearing Habitat

- Atlantic Salmon Rearing Habitat
- Atlantic Salmon Spawning Habitat
- Atlantic Salmon Limited Spawning Habitat

Mapped by Atlantic Salmon Commission (ASC) and US Fish & Wildlife Service (USFWS) from field surveys on selected Penobscot and Kennebec River tributaries and the Dennys, Ducktrap, East Machias, Machias, Pleasant, Narragansuc, and Sheepscot Rivers.

Data Sources

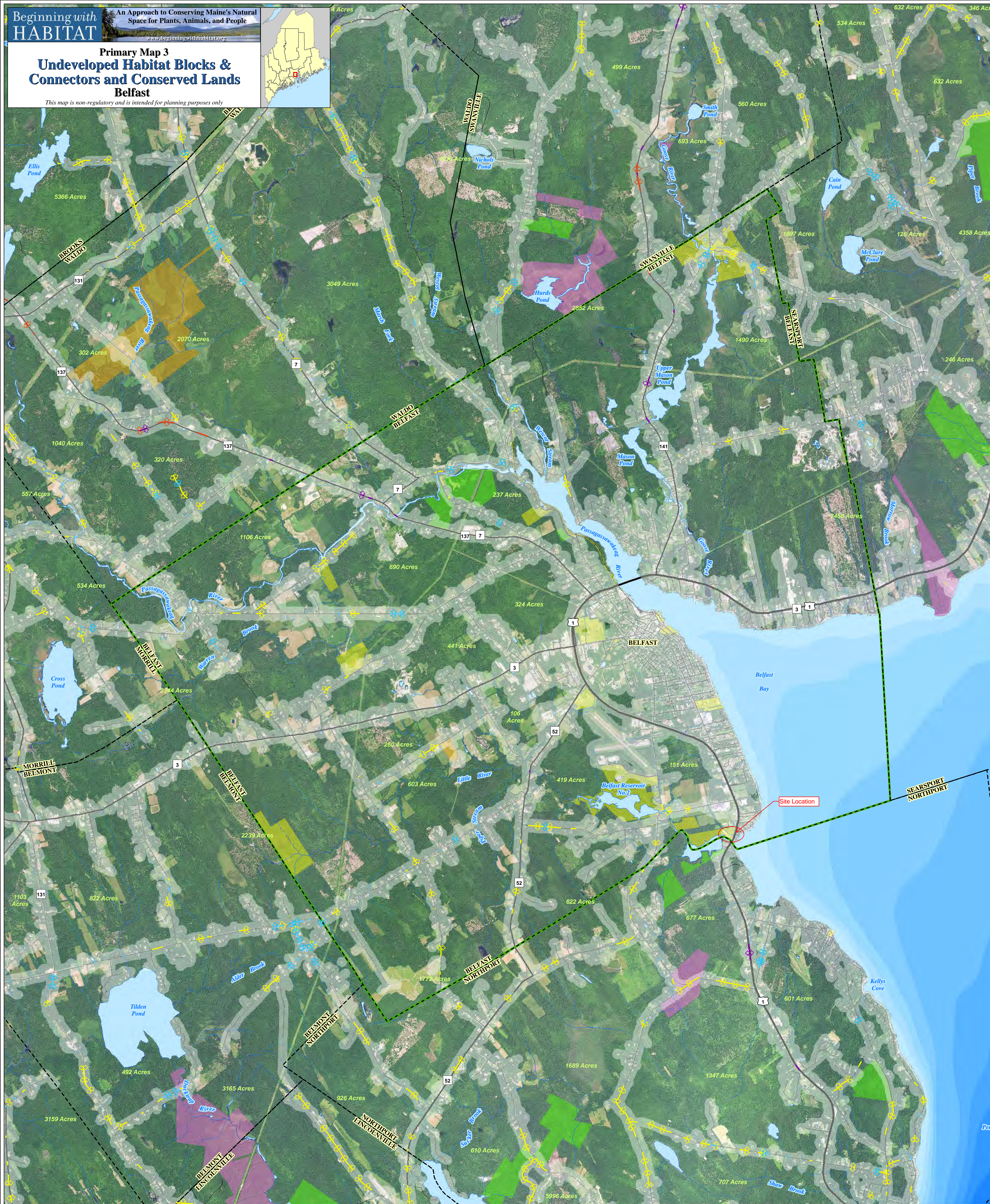
- DATA SOURCE INFORMATION**
- TOWNSHIP BOUNDARIES
 - Maine Office of GIS: [Metro24](http://www.maine.gov/gis/metro24) (2013)
 - ROADS
 - Maine Office of GIS, Maine Department of Transportation: [Maddpub](http://www.maine.gov/dep/blwq/docland/nrpapage.htm) (2015)
 - HYDROLOGY
 - U.S. Geological Survey National Hydrography Dataset (NHD) Maine (2012)
 - DEVELOPED
 - Maine Office of GIS, Maine Department of Inland Fisheries and Wildlife, and multiple other agencies: [Imperv](http://www.maine.gov/dep/blwq/docland/nrpapage.htm) (2015)
 - ESSENTIAL & SIGNIFICANT WILDLIFE HABITATS
 - Maine Office of GIS, Maine Department of Inland Fisheries & Wildlife: [DWA, ETSC, Ehlprtn, Ehrtrn, IWWH, Sm. Shorebird, TWWH](http://www.maine.gov/dep/blwq/docland/nrpapage.htm) (2003-2015)
 - RARE NATURAL COMMUNITIES & PLANTS
 - Maine Natural Areas Program: [MNPAP_eos](http://www.maine.gov/dep/blwq/docland/nrpapage.htm) (2015)
 - ATLANTIC SALMON HABITAT
 - Maine Office of GIS, Maine Atlantic Salmon Commission, U.S. Fish & Wildlife Service: [Asha63](http://www.maine.gov/dep/blwq/docland/nrpapage.htm) (2013)

- DATA SOURCE CONTACT INFORMATION**
- Maine Office of GIS: <http://www.maine.gov/gis/catalog/>
 - Maine Natural Areas Program: <http://www.maine.gov/dep/blwq/docland/nrpapage.htm>
 - Maine Department of Inland Fisheries & Wildlife: <http://www.maine.gov/fw/>
 - U.S. Fish & Wildlife Service, Gulf of Maine Program: <http://gulfofmaine.fws.gov/>
 - Maine Atlantic Salmon Commission: <http://www.maine.gov/asc/>
 - Maine Department of Transportation: <http://www.maine.gov/mdot/>

DIGITAL DATA REQUEST
To request digital data for a town or organization, please visit our website: http://www.beginningwithhabitat.org/the_mnps/gis_data_request.html

Primary Map 3
Undeveloped Habitat Blocks & Connectors and Conserved Lands
Belfast

This map is non-regulatory and is intended for planning purposes only



LEGEND

This map highlights undeveloped natural areas likely to provide core habitat blocks and habitat connections that facilitate species movements between blocks. Undeveloped habitat blocks provide relatively undisturbed habitat conditions required by many of Maine's species. Habitat connections provide necessary opportunities for wildlife to travel between preferred habitat types in search for food, water, and mates. Roads and development fragment habitat blocks and can be barriers to moving wildlife. By maintaining a network of interconnected blocks towns and land trusts can protect a wide variety of Maine's species—both rare and common—to help ensure rich species diversity long into the future. Maintaining a network of these large rural open spaces also protects future opportunities for forestry, agriculture, and outdoor recreation.

- Organized Township Boundary
- Unorganized Township
- Selected Town or Area of Interest

Habitat Blocks

- Development Buffer (pale transparency)
250-500 foot buffer around improved roads and developed areas based on development intensity.
- Undeveloped Habitat Block
Remaining land outside of Development Buffers. Blocks greater than 100 acres are labeled with their estimated acreage.

Approximate Road Crossing Habitat Connections

Represented habitat connections identified through computer modeling highlight locations where quality habitat is likely to occur on both sides of a given road between undeveloped habitat blocks greater than 100 acres and between higher value wetlands. These representations are approximate and have not been field verified.

Undeveloped Block Connectors

- Likely road crossing areas linking undeveloped habitat blocks greater than 100 acres. The threat of habitat fragmentation and animal mortality corresponds to traffic volume.
- Yellow lines represent habitat road crossings with daily traffic volumes less than 2000 vehicles per day.
- Red lines represent habitat road crossings with daily traffic volumes greater than 2000 vehicles per day.

Riparian Connectors

- Likely crossing locations for wetland dependent species moving between waterways and wetlands divided by roads.
- Blue lines represent riparian road crossings with daily traffic volumes less than 2000 vehicles per day.
- Purple lines represent riparian road crossings with daily traffic volumes greater than 2000 vehicles per day.

Highway Bridge Connectors

- Highway bridges along I-95 and I-295 that span riparian habitat connecting adjacent but separated habitat blocks. These are locations where species are likely to take advantage of infrastructure to move between habitat blocks.

Conserved Lands

The State of Maine's conserved lands database includes lands in federal, state, and non-profit ownership. It does not include many privately owned conservation lands, especially those protected by local land trusts, or town owned conservation lands. For the most accurate and current information about land ownership, consult with the local assessor and/or other local land management agencies. If public access potential to any of the properties displayed here is uncertain, landowners should be contacted to determine if permission is necessary.

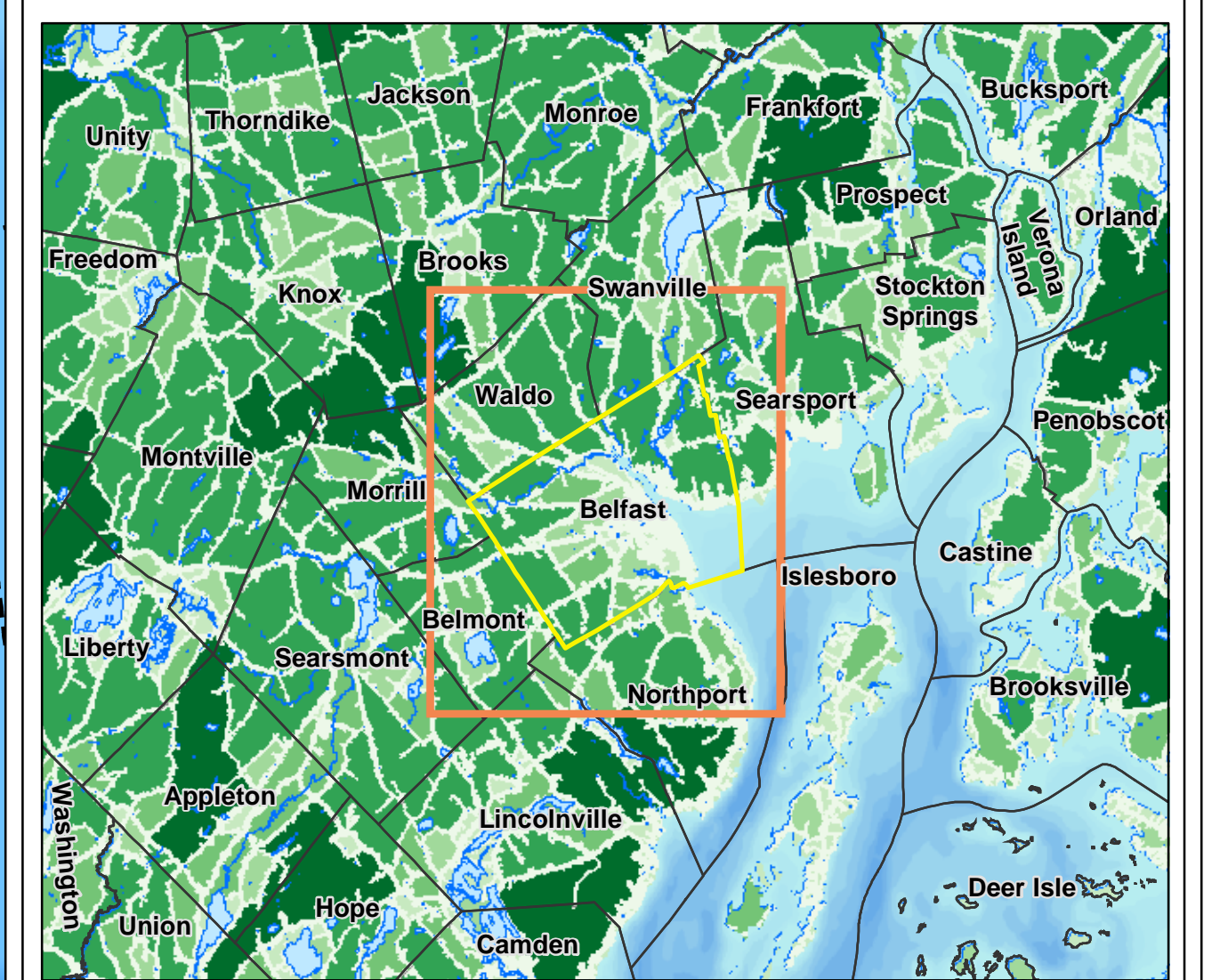
Ownership Type (transparent layers)

- Federal
National parks, forests, and wildlife refuges. (Includes Canadian conserved lands.)
- State
Wildlife Management Areas and other properties managed by the Department of Inland Fisheries and Wildlife, state parks, and parcels managed by the Bureau of Parks & Lands.
- Municipal
Town parks, water district properties, community forests, etc.
- Private Conservation
Properties owned and managed by private (usually non-profit) organizations such as The Nature Conservancy, Maine Coast Heritage Trust, Trust for Public Land, and local land trusts.
- Easement
Voluntary legal agreements that allow landowners to realize economic benefit by permanently restricting the amount and type of future development and other uses on all or part of their property as they continue to own and use it.

Aerial Imagery

Aerial imagery is often the best tool available to visualize existing patterns of development and resulting changes in the natural landscape. By depicting undeveloped habitat blocks, habitat connectors and conserved lands with aerial photos, the map user can more easily identify opportunities to expand the size and ecological effectiveness of local conservation efforts.

Regional Undeveloped Blocks



- 0 - 250 acres
 - 250-500 acres
 - 500-1,000 acres
 - 1,000-5,000 acres
 - > 5,000 acres
- 1 : 325,000 1 inch equals 5 miles

Data Sources

- DATA SOURCE INFORMATION**
- TOWNSHIP BOUNDARIES**
Maine Office of GIS: metwp24 (2013)
- ROADS**
Maine Office of GIS, Maine Department of Transportation: medotpub (2015)
- HYDROLOGY**
U.S. Geological Survey: NHD_Maine (2012)
- UNDEVELOPED HABITAT BLOCKS, DEVELOPMENT BUFFER, CONNECTORS**
Maine Department of Inland Fisheries and Wildlife (2015)
- CONSERVATION LANDS**
Maine Department of Agriculture, Conservation, and Forestry, Land Use Planning Commission, Maine Department of Inland Fisheries and Wildlife:
Conserved Lands (2015)
- AERIAL IMAGERY**
U.S. Department of Agriculture: NAIP 2013 - state-wide 1-meter color orthoimagery
- DATA SOURCE CONTACT INFORMATION**
Maine Office of GIS - <http://www.maine.gov/megis/catalog/>
Maine Dept. of Agriculture, Conservation and Forestry - <http://www.maine.gov/dacf/>
Maine Dept. of Inland Fisheries & Wildlife - <http://www.maine.gov/ifw/>
Maine Department of Transportation - <http://www.maine.gov/mdot/>
Maine Department of Environmental Protection - <http://www.maine.gov/dep/>
- DIGITAL DATA REQUEST**
To request digital data for a town or organization, visit our website.
http://www.beginningwithhabitat.org/the_maps/gis_data_request.html