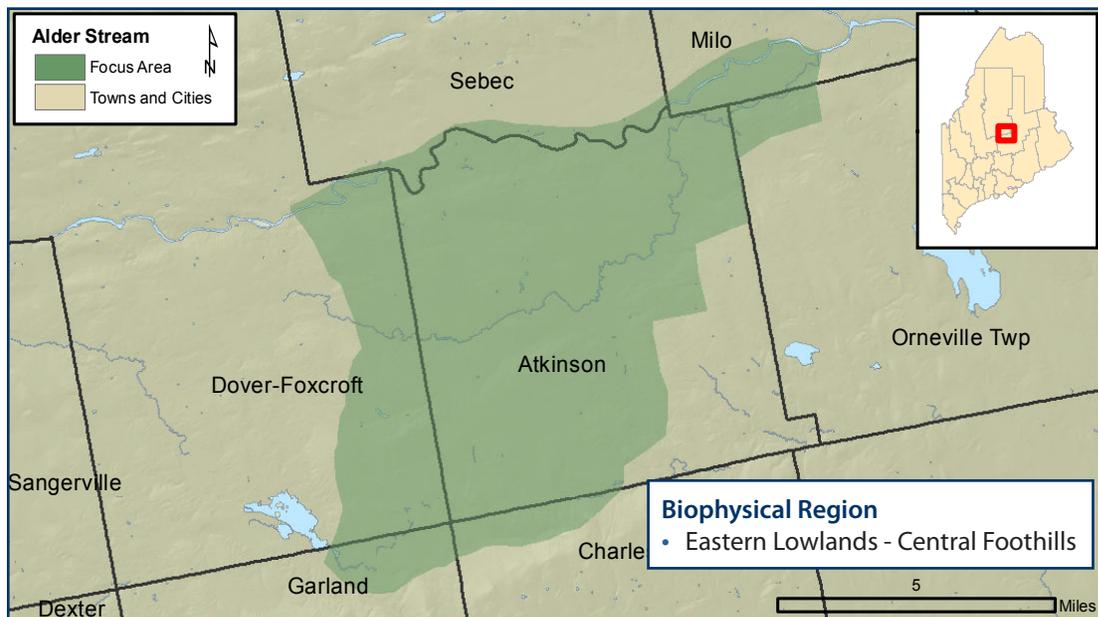


Alder Stream



WHY IS THIS AREA SIGNIFICANT?

The Alder Stream Focus Area provides habitat for several rare and notable plant and animal species, including wood turtle, bald eagle, creeper (a freshwater mussel), wild leek, and American chestnut. There are also good examples of floodplain forests, large, open peatlands (bogs and fens), and vernal pools. In addition, over 1,700 acres of Deer Wintering Area, almost 2,800 acres of Inland Waterfowl and Wading Bird Habitat, and miles of brook trout streams contribute to the ecological value of the Alder Stream Focus Area.

OPPORTUNITIES FOR CONSERVATION

- » Educate recreational users and local citizens about the ecological and economic benefits provided by the Focus Area.
- » Encourage best management practices for forestry, vegetation clearing, and soil disturbance activities near sensitive features to maintain ecological functions and values, habitat connectivity for wildlife, hydrologic processes, and watershed protection.
- » Maintain intact forested buffers along water bodies and wetlands to protect water quality and provide valuable riparian habitat for wildlife.
- » Monitor and remove invasive plant populations.
- » Work with landowners to encourage sustainable forest management practices on privately owned forest lands.
- » Work with willing landowners to secure permanent conservation status for unprotected significant features.

For more conservation opportunities, visit the Beginning with Habitat Online Toolbox: www.beginningwithhabitat.org/toolbox/about_toolbox.html.

Rare Animals

- Bald Eagle
- Wood Turtle
- Creeper

Rare Plants

- American Chestnut
- Wild Leek

Rare and Exemplary Natural Communities

- Raised Level Bog Ecosystem
- Unpatterned Fen Ecosystem
- Upper Floodplain Hardwood Forest

Significant Wildlife Habitats

- Inland Waterfowl and Wading Bird Habitat
- Deer Wintering Area
- Significant Vernal Pools

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Maine Natural Areas Program (all photos)



Alder Stream, Maine Natural Areas Program

FOCUS AREA OVERVIEW

Most of Alder Stream Township is currently in forest cover, with little development, although much of the land was cleared for agriculture at one time. There is some current agricultural land use along the north side of the Piscataquis River. Approximately 44% of the Focus Area has been conserved (through fee ownership and easement), and there is good public access via the Bud Leavitt Wildlife Management Area and several land trust projects.

RARE AND EXEMPLARY NATURAL COMMUNITIES

Upper Floodplain Floodplain Forest

Portions of the Piscataquis River banks support Upper **Floodplain Hardwood Forest** influenced by periodic flooding. Floodplain forest occurs on flat, elevated terraces approximately eight feet above the river bed. A slightly higher berm where sediment has been deposited as it leaves the river channel separates this forest from the treeless and ice-scoured riverbank. The forest canopy in this Upper Floodplain Hardwood Forest is dominated by black cherry and red maple, while the open understory includes sensitive fern, ostrich fern, dewberry, trout lily, inflated sedge, and lady fern. The trees are not particularly large (6-12" in diameter for the most part), and parts of these terrace forests may have been cleared long ago.

Raised Level Bog Ecosystem

This large wetland within the Bud Leavitt Wildlife Management Area supports a variety of peatland types, including black spruce bog, dwarf shrub bog, leatherleaf bog, northern white cedar swamp, and open cedar fen. An open canopy of stunted black spruce is typical in the black spruce bog and dwarf shrub bog. The leatherleaf bog has virtually no tree cover and is dominated by leatherleaf shrubs, and pools of water. The northern white cedar swamp also has standing pools of water, and at least some of these have apparent surface flow. Some stumps in the area indicate a harvest 40 or more years ago, and old evidence of beavers is present.

Unpatterned Fen Ecosystem

The ~1,700 acre Alder Stream Fen lies in a broad basin along either side of Alder Stream, a tributary to the Piscataquis River.

Public Access Opportunities

- » Alder Stream Project- Northeast Wilderness Trust
- » Bud Leavitt Wildlife Management Area
- » Piscataquis Reserve- Northeast Wilderness Trust

This Unpatterned Fen Ecosystem complex consists of patches of intermixed Alder Thicket and Tussock Sedge Meadow. The Alder Thicket is dominated by speckled alder, with an understory of sensitive fern, dewberry, tussock sedge, and alderleaf buckthorn. Wetter Tussock Sedge Meadows consist of tussock sedge with meadowsweet and sweetgale shrubs.

Lowland Spruce-Fir Forest grows on slightly higher ground and grades into the Alder Thickets within the ecosystem complex. Lowland Spruce – Fir is characterized by balsam fir, red spruce, northern white cedar, and red maple. A number of vernal pools occur throughout the area, providing habitat for wood frogs, mole salamanders, and other reptiles, amphibians and specialized invertebrates.

The downstream section of Alder Stream has a narrow river-shore containing ostrich fern, speckled alder, tussock sedge, and false hellebore. Small patches of red maple floodplain flank the river here. A small patch of Hardwood River Terrace Forest contains American elm, black cherry, ostrich fern, and false hellebore, jack-in-the-pulpit, and virgin's bower. There is evidence of a past dam on a small wetland here, and an old cellar hole and road bed suggest a former homestead was in this area. At least part of the area was likely once cleared for pasture.

There is a minor impoundment at the road crossing on its northeastern end. Roughly half of the complex consists of open wetland vegetation, primarily dwarf shrub bog, and the remainder is forested bog with black spruce, cedar, and some red maple. Parts of the peatland are slightly raised and support widely scattered low-growing white pine and red spruce trees.

CHARACTERISTIC SPECIES

Bald eagles (*Haliaeetus leucocephalus*) were nearly extirpated because of widespread use of environmental contaminants that caused eggshell thinning and impaired reproductive success. With bans on the use of these contaminants and habitat protection measures, bald eagles have made a tremendous recovery. In 2009 they were removed from the state Endangered Species list. They remain listed as Special Concern. Bald eagles and their nest sites are protected by the US Fish and Wildlife Service under the Bald and Golden Eagle Protection Act.

Rivers, streams, and their associated floodplains support the Special Concern **wood turtle** (*Glyptemys insculpta*), a species that makes extensive use of both aquatic and terrestrial habitats. For much of the fall and winter seasons, wood turtles are found in slow-moving clear-water streams with a predominantly sand or gravel substrate. During late spring and summer, they utilize the surrounding upland areas, including forests, floodplains, meadows, and hayfields. From late fall to early spring, wood turtles hibernate underwater in sheltered areas of rivers, including pool bottoms, under riverbanks, or under woody debris. Wood turtles have evolved relatively long adult life spans to offset the long age to reproductive

Ecological Services of the Focus Area

- Fisheries habitat
- Floodwater retention
- Sediment/nutrient retention
- Rare wildlife habitat
- Water quality and ecological integrity of Alder Stream, Brown Brook, West Branch Dead River, and Piscataquis River
- Ecological connectivity and high quality habitat for waterfowl, wading birds, vernal pool amphibians, deer, moose, rare plants, and other regional biodiversity

Economic Contributions of the Focus Area

- Research and education
- Floodwater conveyance
- Groundwater recharge
- Recreation (hunting, fishing, hiking, bird watching)
- Run-off purification
- Ecotourism
- Wildlife habitat for a number of game species that are seasonally important to Maine's rural economy



Alder Stream Wetlands, Maine Natural Areas Program

maturity (15 years or more) and high levels of nest and juvenile mortality. Because of this unusual life history, wood turtle population densities are usually low, and populations are extremely vulnerable to any human sources of adult mortality including collection, road kill, loss to agricultural machinery and predation by pets.

The Piscataquis River provides habitat for freshwater mussels, including the **creeper** (*Strophitus undulatus*). Although widely distributed across the state and throughout its range, the creeper mussel is rarely abundant. Usually fewer than 10 individuals are found at a single location, and there is considerable question about the long-term viability of such small populations. Consequently, this species is listed as Special Concern in Maine. The creeper prefers clean, flowing water, and thus habitat degradation and pollution can negatively affect this species.

The **American chestnut** (*Castanea dentata*), a species of Special Concern, was once one of the dominant forest trees of the Northeast U.S., before the chestnut blight virtually eliminated it from the landscape in the early 1900s. Pockets of chestnut still remain scattered around Maine. Significantly, several mature trees, some reaching to 20 inches diameter and 80 feet in height, occur in a grove along Crosby Road.

A few individuals of Special Concern **wild leek** (*Allium tricoccum*) are widely scattered in the floodplain forest along the Piscataquis River. Invasive honeysuckle and barberry are present in this area.

Extensive **Inland Waterfowl and Wading Bird Habitat** and **Deer Wintering Areas** are also mapped within the Focus Area.

CONSERVATION CONSIDERATIONS

- » The ecological integrity of peatlands, including all the processes and life forms they support, is dependent on the maintenance of the current hydrology and water quality of these systems. Intensive timber harvesting, vegetation clearing, soil disturbance, new roads, and development on buffering uplands can result in greater runoff, sedimentation, and other non-point sources of pollution. Peatland systems benefit from establishing and/or maintaining vegetative buffers around their perimeter wherever possible. A buffer of 250 feet or more will serve to limit impacts from adjacent development, help prevent erosion, limit colonization of invasive species, and prevent unnecessary impacts from off road vehicle use.
- » Improperly sized culverts and other stream crossing structures can impede movement of fish and aquatic invertebrates effectively fragmenting local aquatic ecosystems and potentially leading to local declines of some species. Future management should maintain or restore the site's natural hydrology.



Wild Leek, Maine Natural Areas Program

- » With expected changes in climate over the next century, plant and wildlife species will shift their ranges. Maintaining landscape connections between undeveloped habitats will provide an important safety net for biodiversity as species adjust their ranges to future climate conditions. Maintaining wide, undisturbed riparian habitats can potentially mitigate the effects of climate change by keeping streams and wetlands shaded and providing terrestrial wildlife migration corridors.
- » Eagles are extremely sensitive to disturbance during their nesting season. Any activities near their nests or within their nesting territory during this period may cause nest failure or may cause adults to abandon the nest. Generally, it is recommended that a 330-foot radius buffer be left undisturbed around an eagle nest during any kind of land-clearing or timber harvest activity. Additional habitat protection within ¼ mile radius of a nesting site is another recommended measure that can help support nesting eagles. Eagle nests are protected by the US Fish and Wildlife Service under the Bald and Golden Eagle Protection Act. When planning activities near eagle nest sites, contact a wildlife biologist for assistance with project planning and permitting.
- » Wood turtles have experienced declines throughout their range in eastern North America. The principal threats are direct mortality by vehicles on roads, encounters with motorized equipment in agricultural, forestry, and haying operations, as well as collection as pets. These problems are exacerbated when combined with widespread fragmentation, and loss of their upland habitat associated with development. Like many turtle species, wood turtles are long-lived and slow to mature, making them particularly vulnerable to adult mortality. It can take years to replace adult turtles when they are killed, and even a small number of annual deaths can be devastating to a population. To

Focus Areas of Statewide Ecological Significance: Alder Stream

thrive, wood turtles generally require an intact matrix of riverine and upland habitat (forests and fields) that is free of intensive human activity.

- » This area includes Significant Wildlife Habitat for waterfowl and wading birds. Both public land managers and private landowners should follow best management practices with respect to activities in and around wetlands, shoreland areas, and Significant Wildlife Habitat. Maintaining wide forested buffers along all lakes, rivers, streams, and wetlands will provide valuable riparian habitat for many wildlife species. Vegetation removal, soil disturbance and construction activities may require a permit under the Natural Resources Protection Act. Consult with a Maine Department of Inland Fisheries and Wildlife biologist prior to planning any activity that may disturb the forest around an Inland Wading Bird and Waterfowl Habitat.
- » An adequate buffer should be retained between developed lots or timber harvest areas and all shores and wetlands. The

state minimum shoreland zoning standards restrict harvest and clearing within 250' of the shore of ponds, some rivers, and large wetlands. Because different species can have different buffering requirements, better protection will be afforded to the full suite of wetland and riparian plants and animals with larger buffers. Any timber harvesting within and adjacent to the wetland should be implemented with strict adherence to state or local Shoreland Zoning guidelines and Maine Forest Service Best Management Practices.

- » A number of invasive plant species occur within the Focus Area, including honeysuckles (*Lonicera spp.*) and Japanese knotweed (*Fallopia japonica*). It is important to identify sites where these threaten important habitats, and if feasible, attempt to control their spread.



Alder Stream and Wetlands, Maine Natural Areas Program

For more information about Focus Areas of Statewide Ecological Significance, including a list of Focus Areas and an explanation of selection criteria, visit www.beginningwithhabitat.org

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	S4B,S4N	G5
	Creepers	<i>Strophitus undulatus</i>	SC	SNR	G5
	Wood Turtle	<i>Glyptemys insculpta</i>	SC	S4	G4
Plants	American Chestnut	<i>Castanea dentata</i>	SC	S4	G4
	Wild Leek	<i>Allium tricoccum</i>	SC	S3	G5
Natural Communities					
	Raised Level Bog Ecosystem	Raised Level Bog Ecosystem		S4	GNR
	Unpatterned Fen Ecosystem	Unpatterned Fen Ecosystem		GNR	S5
	Upper Floodplain Hardwood Forest	Hardwood river terrace forest		GNR	S3

State Status*

- E Endangered: Rare and in danger of being lost from the state in the foreseeable future, or federally listed as Endangered.
- T Threatened: Rare and, with further decline, could become endangered; or federally listed as Threatened.
- SC Special Concern: Rare in Maine, based on available information, but not sufficiently rare to be Threatened or Endangered.

*State status rankings are not assigned to natural communities.

State Rarity Rank

- S1 Critically imperiled in Maine because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres).
- S2 Imperiled in Maine because of rarity (6–20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3 Rare in Maine (on the order of 20–100 occurrences).
- S4 Apparently secure in Maine.
- S5 Demonstrably secure in Maine.

Global Rarity Rank

- G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation.
- G2 Globally imperiled because of rarity (6–20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3 Globally rare (on the order of 20–100 occurrences).
- G4 Apparently secure globally.
- G5 Demonstrably secure globally.