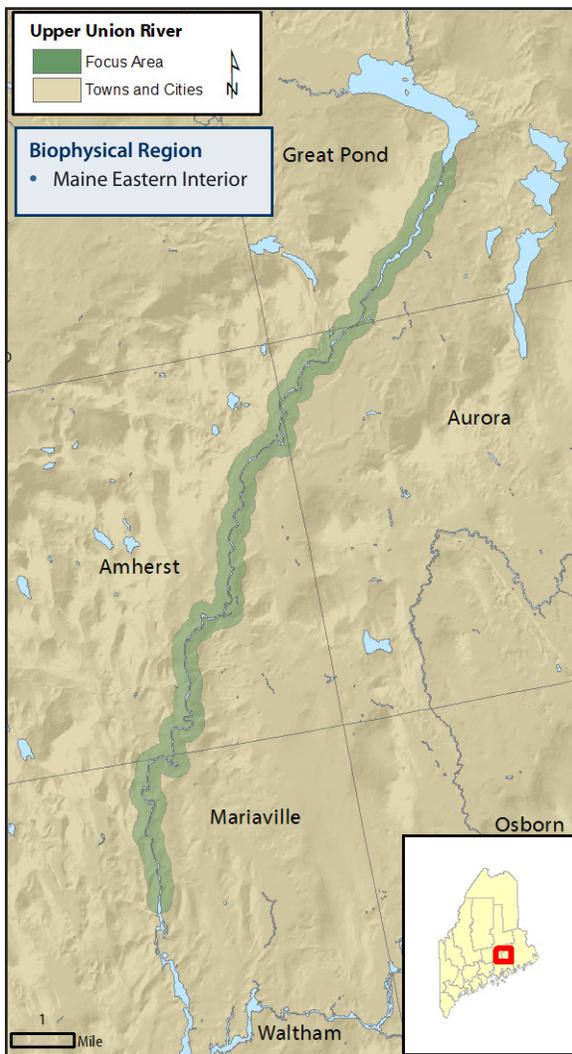
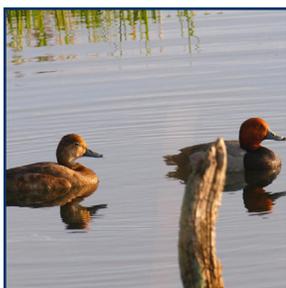
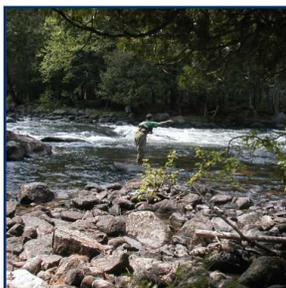
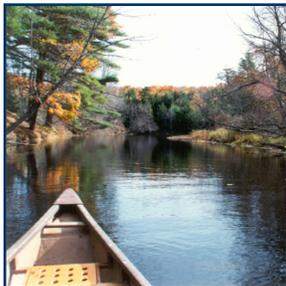


Upper Union River



Rare Animals

- Atlantic Salmon
- Brook Floater
- Wood Turtle
- Ribbon Snake
- Upland Sandpiper

Rare Plants

- Pale Green Orchis

Significant Wildlife Habitats

- Inland Wading Bird and Waterfowl Habitat
- Deer Wintering Area

Photo credits, top to bottom: ME Department of Inland Fisheries and Wildlife (Photos 1-4), Paul Cyr

WHY IS THIS AREA SIGNIFICANT?

The undammed and largely unimpaired waters of the West Branch of the Union River, beginning at Great Pond and extending downstream approximately 13 miles to Graham Lake, support habitat for several rare animal species that depend on clean and free flowing waters. This stretch of the West Branch of the Union River is a popular recreation destination for anglers and boaters as well.

OPPORTUNITIES FOR CONSERVATION

- » Work with willing landowners to secure permanent conservation status for unprotected significant features in the focus area.
- » Encourage town planners to improve approaches to development that may impact focus area functions.
- » Encourage landowners to maintain enhanced riparian buffers.
- » Encourage best management practices for forestry, vegetation clearing, and soil disturbance activities near significant features.
- » Maintain natural hydrologic regime by avoiding drainage or impoundment of the river, wetlands, streams and water bodies.
- » Educate recreational users about the ecological and economic benefits provided by the Focus Area

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

Public Access Opportunities

- Great Pond Boat Launch/
Union River Canoe Trip



The Upper Union River is a popular destination for anglers.

FOCUS AREA OVERVIEW

A 13-mile reach of the West Branch of the Union River, beginning in Great Pond and extending downstream to Graham Lake is undammed and largely unimpaired by activities in the surrounding uplands. The clean free-flowing waters of the focus area support healthy populations of brook floater as well as wood turtles and ribbon snakes, all rare species in Maine. In addition, the West Branch is a popular destination known for its angling and boating opportunities.

CHARACTERISTIC SPECIES

Healthy populations of **brook floater** (*Alasmidonta varicosa*), a globally rare mussel species, can be found at several sites in the waters of the West Branch of the Union River. This state Threatened species is found among rocks, gravel, and sand in free-flowing creeks and small rivers. The brook floater has experienced significant declines throughout its range, and many populations have been extirpated. Even where it is found, populations often consist of just a small number of aging individuals. Maine holds some of the best remaining populations of the species anywhere in its range and is important to this species' conservation.

Wood turtles (*Clemmys insculpta*), also a species of Special

Ecological Services of the Focus Area

- Provides high quality habitat for waterfowl, wading birds, deer and other wildlife.
- Protects water quality in the West Branch of the Union River and downstream.
- Supports regional biodiversity by providing habitat for rare animals.

Economic Contributions of the Focus Area

- Attracts tourism to the area for hiking, wildlife observation, paddling, hunting, and angling.
- Serves as a valuable recreational resource for local residents.
- Contributes to recreational value of West Branch of the Union River by protecting water quality, fisheries, and wildlife habitat.

Concern, use the river as well as the tributary streams, wetlands, vernal pools and the associated riparian forests. These turtles overwinter in well-oxygenated flowing water and utilize adjacent wetlands for feeding and adjacent uplands for feeding and nesting. Upland habitats are also critical for basking, aestivating (a period of late summer inactivity) and as travel corridors between aquatic habitats.

Wood turtles have evolved relatively long adult life spans to offset the long time it takes to reach reproductive maturity (12 or more years) and to offset high levels of nest and juvenile mortality. Because of this unusual life history, wood turtle populations are at low densities, and thus populations are extremely vulnerable to any human sources of adult mortality. Road mortality and collecting for pets, for example, can be extremely deleterious, as the attrition of just a few individuals every year can lead to the long-term decline and extinction of a local population. The secondary effects of human development – increased predators (e.g., dogs, cats, raccoon, skunks), water, light, and noise pollution, filling of small wetlands, and blocking upland travel corridors (roads, rail beds, yards) – also impact populations.

The focus area also provides habitat for the Special Concern **ribbon snake** (*Thamnophis sauritus*), a semi-aquatic snake that can be found in bogs, shrub swamps, forested wetlands, wet meadows, streams, and pond/lake edges. They prefer the periphery of these areas where vegetation and supplies of amphibians are abundant. Most of Maine's ribbon snake population occurs in southern and south-central Maine. Due to the high rates of development in these areas, this species is vulnerable to habitat loss, fragmentation, and degradation of their habitats. The wetland-upland ecology of this snake puts it at further risk due to inadequate regulations protecting riparian and upland habitat around smaller wetlands.

The free flowing waters of the Union River provide extensive habitat for the state and federally Endangered **Atlantic salmon** (*Salmo salar*) and provide a high value **brook trout fishery**. Several **Inland Wading Bird and Waterfowl Habitats** and **Deer Wintering Areas** have been mapped along the riparian corridor in the Upper Union River Focus Area as well. Inland Wading Bird and Waterfowl Habitat provides nesting habitat and feeding areas and are essential for maintaining viable waterfowl and wading bird populations. Deer congregate in wintering areas, which provide reduced snow depths, ample food and protection from wind.

In addition, a small population of the **pale green orchis** (*Platanthera flava*) was found on the east bank of the Union River in Mariaville in 1997.

CONSERVATION CONSIDERATIONS

» Degradation of free-flowing aquatic habitat (e.g damming, channelization, flow diversion, improperly installed or maintained culverts or watershed disturbance) is one of the



Brook Floater, Ethan Nedea



Wood Turtle, MDIFW



Ribbon Snake, Jonathan Mays

greatest causes for the loss of riverine aquatic species like freshwater mussels, wood turtles and Atlantic salmon. Care should be taken to avoid alterations to the natural hydrological regime within and upstream of the focus area.

- » Freshwater mussels are sensitive to contaminants and changes in habitat. Degradation of water quality by inorganic and organic pollutants from point and non-point sources has the capacity to devastate sensitive aquatic species. One way to limit impact from erosion and siltation caused by activities such as logging in the watershed is to establish riparian buffers. Wider buffers, with as little alteration as possible within 250' of the wetland/upland border, provide better protection for riparian species.
- » Maintenance and/or improvement of water quality and habitat integrity via protection of riparian buffers is essential. Any activities that may potentially degrade water quality or negatively alter habitat type (including substrate, flow rate, water levels) should be avoided. A minimum of 250-foot contiguous, forested buffer is recommended on waterways that provide habitat for rare, threatened, and endangered mussel species. Likewise, because larval freshwater mussels require a specific fish host, activities that may result in changes to the fish community or prevent access by fish should be avoided. When designing projects near known mussel habitat consult with a MDIFW biologist to assist with planning, and refer to the Maine Forest Service's Forestry Best Management Practices handbook or the Maine

Department of Environmental Protection's Maine Erosion and Sediment Control Recommendations.

- » Introduction of exotic species (such as introduced fish species) may affect potential host fish populations for mussels in the river and thereby limit the reproductive success of mussels.
- » This area includes Significant Wildlife Habitat for waterfowl and wading birds and Deer Wintering Areas. Both land managers and private landowners should follow best management practices in these areas. Consult with a MDIFW biologist prior to planning any activity that may disturb the forest around mapped Inland Waterfowl and Wading Bird Habitats or Deer Wintering Areas.
- » 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.

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Brook Floater	<i>Alasmidonta varicosa</i>	T	S3	G3
	Ribbon Snake	<i>Thamnophis sauritus</i>	SC	S3	G5
	Wood Turtle	<i>Clemmys insculpta</i>	SC	S4	G4
	Atlantic salmon	<i>Salmo salar</i>	E		
Plants	Pale Green Orchis	<i>Platanthera flava var. herbiola</i>	SC	S2	G4T4Q

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.