

St. John River - Seven Islands and White Pond Fen



WHY IS THIS AREA SIGNIFICANT?

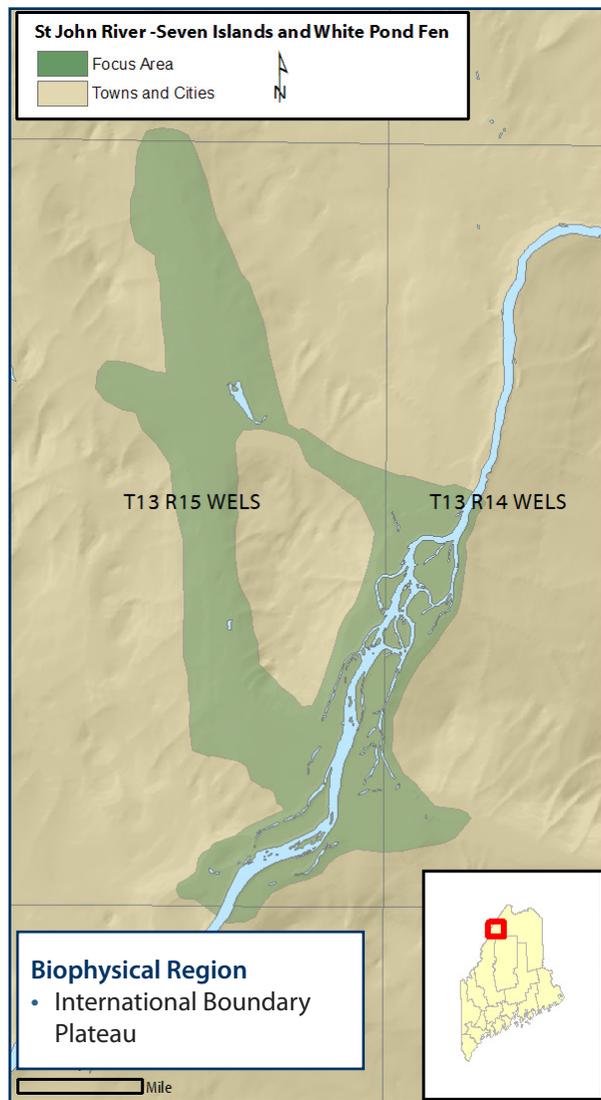
The Upper St. John River is a treasured recreational resource, known for its world-class wilderness paddling opportunities. But the river's ecological values may be even more significant. The river corridor supports one of the highest concentrations of rare plants in Maine, as a result of the unusual processes that shape its ecology. The St. John River- Seven Islands and White Pond Fen Focus Area provides habitat for three rare animals, thirteen rare plants, and several species of fish. It also contains 1,773 acres of Significant Wildlife Habitat for inland waterfowl and wading birds.

OPPORTUNITIES FOR CONSERVATION

- » Maintain wide forested buffers along the wetlands and river corridor.
- » Protect sensitive natural features through careful management planning on conserved lands.
- » Educate recreational users on proper backcountry etiquette, including leave-no-trace camping.
- » Work with landowners to encourage sustainable forest management practices on remaining privately owned forest lands in and around the focus area.

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

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Rare Animals

Quebec Emerald
Ringed Boghaunter
Wood Turtle

Rare and Exemplary Natural Communities

Circumneutral Fen
Unpatterned Fen Ecosystem

Rare Plants

Bog Bedstraw
Canada Burnet
English Sundew
Livid Sedge
Low Spike-moss
Marsh Valerian
Mistassini Primrose
Moor Rush
Northern Bog Sedge
Northern Comandra
Showy Lady's-slipper
Sparse-flowered Sedge
Swamp Fly-honeysuckle

Significant Wildlife Habitats

Inland Waterfowl and Wading Bird Habitat
Deer Wintering Area



St. John Pond, Maine Natural Areas Program

FOCUS AREA OVERVIEW

The ecology of the St. John River corridor is governed by the river's dynamic cycles of freezing, thawing, and flooding. Each spring, the headwaters of the river melt first, causing ice jams and flooding until the downstream portions of the river melt, the ice jams break, and the floodwaters rush downstream. The combination of ice scour and violent flooding, along with cold winters, make the St. John corridor a uniquely harsh and challenging environment. Only plants with special adaptations to this environment can survive here. As a result, the river banks and corridor support one of the highest concentrations of rare plants and natural communities in Maine.

This focus area encompasses a stretch of the river and three of its small tributaries around the Seven Islands, about 6 miles downstream from Ninemile Bridge. It is one of four focus areas located along the upper St. John River. Most of the focus area is protected via conservation easement, but the easternmost portion of the area (about 700 acres) is private commercial forest land.

Most of the significant features in this focus area are found within a large wetland complex in the northern portion of the focus area, around White Pond and White Brook. This complex

is an excellent example of an unpatterned fen ecosystem. Within this ecosystem is an excellent example of a rare circumneutral fen natural community. Because of their distinctive soil and water chemistry, circumneutral fen communities often include rare or uncommon plant species.

This site provides habitat for twelve species of rare plants. This includes two Threatened species, low spike-moss (*Selaginella selaginoides*) and showy lady's slipper (*Cypripedium reginae*), and one Endangered species, the carnivorous English sundew (*Drosera anglica*). Most of these rare plant populations are relatively large and healthy. The fen also supports a population of the very rare Quebec emerald dragonfly (*Somatochlora brevicincta*), which was found to the north of White Pond.

The St. John River and its immediate floodplain also have special ecological value in this focus area. This section of the river includes the "Seven Islands". The islands are an extensive mosaic of tall grass meadow, alder thickets, sloughs, marshes, and gravel bars. Along with the open water of the river, the islands create one of the most dynamic areas of wildlife habitat on the upper St. John River. A Threatened plant species, Canada burnet (*Sanguisorba canadensis*), is known from the "Seven Islands".

The river corridor also provides habitat for the rare wood turtle (*Glyptemys insculpta*), which has been found at several locations along the St. John. Among the more common species that use the river and associated wetlands are waterfowl and wading birds. Over 1,300 acres of high value Significant Wildlife Habitat for these species has been designated in the river corridor. In total, the focus area contains 1,774 acres of Significant Wildlife Habitat.

This focus area encompasses part of the storied St. John River paddling trip, known for its wild and remote character, wildlife viewing, and seasonal whitewater. The focus area includes two riverside campsites and offers good opportunities for wildlife viewing. Protecting the river corridor in this area will not only benefit the many plants and animals that use this habitat but will also contribute to the unique wilderness experience that draws visitors to the river.

Fisheries resources in the Baker Branch were historically for wild brook trout. Muskellunge are now the most prevalent sport fish in the St. John River. Muskellunge were introduced into Lac Frontier, Quebec commencing in 1970 by government biologists and have now spread throughout the St. John drainage from headwaters to the Bay of Fundy. Smallmouth bass are also now present in the St. John River as the result of an illegal introduction in a tributary system located in New Brunswick above Grand Falls. As their population continues to increase, bass will continue to spread upstream into this section of the St. John River where they will provide an additional sport fishery. Small coldwater tributaries to this section of the St. John River in the focus area should continue to support resident populations of brook trout.

RARE AND EXEMPLARY NATURAL COMMUNITIES

The **unpatterned fen ecosystem** is a complex of different wetland types that can include open, shrubby, and wooded

Ecological Services of the Focus Area

- Supports regional biodiversity by providing habitat for rare plants, animals, and natural communities.
- Contributes to water quality and ecological integrity of St. John River.
- Provides habitat connectivity for wildlife.
- Supports the river's natural floodplain dynamics, minimizing downstream flooding.

Economic Contributions of the Focus Area

- Attracts tourism for paddling, wildlife viewing, hunting, and angling.
- Supports valuable recreational fisheries.
- Valuable recreational resource for local residents and visitors from around the world.



St. John Wetland, Maine Natural Areas Program

communities. This is a peatland system that occurs in environments with surface or groundwater flow, as opposed to closed basins. This ecosystem can include both bog and fen communities, but the more diverse fen vegetation is dominant.

The **circumneutral fen** is a peatland community typically dominated by sedges, though the vegetation can grade into dwarf shrubs. Common plants include deer-hair sedge, slender sedge, shrubby cinquefoil, and bog rosemary. This community occurs in areas influenced by calcium-rich water, which means the sites are less acidic than most peatland sites. Sites with water and soils with pH close to neutral, rather than acidic, are known as "circumneutral." The fen community found in this focus area supports a suite of rare plants that are indicators of circumneutral conditions, including livid sedge, northern bog sedge, moor rush, English sundew, marsh valerian, showy lady's-slipper, swamp fly-honeysuckle, and low spike-moss.

CHARACTERISTIC SPECIES

The **wood turtle** (*Glyptemys insculpta*), a species of Special Concern in Maine, has been documented from the stretch of the St. John River around the Seven Islands. The turtles overwinter in well-oxygenated streams and rivers, and then move into surrounding upland and wetland areas during the

summer. Riparian areas, where uplands meet wetlands and water bodies, are crucial habitat. In addition, wood turtles require well-drained, bare soils with ample exposure to sunlight for nesting. Wood turtles, a primarily northeastern species, are declining throughout their range. Maine, however, likely hosts some of the largest and most viable remaining populations in the U.S.

The wood turtle's shell has provided sufficient protection from predators for millions of years, but unfortunately it is no match for car tires, mower blades, or illegal collectors. Wood turtles are long-lived animals that take a minimum of 14 years to reach reproductive age. This coupled with low hatchling success places all the more importance on adult survivorship. Recent studies indicate that losing just a few breeding adult turtles each year to anthropogenic causes may lead to the extinction of several wood turtle populations in Maine. Threats from humans include habitat fragmentation, loss and degradation of aquatic habitat, road and mower mortality, and collection for the pet trade.

The **Quebec emerald** (*Somatochlora brevicincta*) is a medium-sized, metallic brown and green dragonfly with bright green eyes. It is found in open peat bogs and acidic fens within northern forests. Its larvae are thought to live within patches of saturated sphagnum moss. Adults emerge by mid to late June and typically are not found on the wing beyond July in Maine. This species is considered rare in each of the seven states and provinces where it has been found. In the U.S., this species was previously believed to occur only in northern Maine, but it has recently been discovered in Minnesota. The Quebec emerald is classified as a species of Special Concern in Maine with potential threats including peat mining, aerial pesticide spraying, poorly maintained riparian buffers, and climate change.

The **showy lady's-slipper** (*Cypripedium reginae*) is a rare orchid found on the edges of peatlands or sunlit openings of mossy woods. As its name would suggest, it is larger and showier than its more familiar relative, the pink lady's-slipper. The showy lady's-slipper has white petals and sepals contrasting with a magenta pink pouch. The plant is covered with hairs that can cause a rash similar to poison ivy.

Because orchids are very popular with some specialty gardeners, many naturally occurring orchids are threatened by collection from the wild. This rare species is difficult to propagate, putting it at increased risk from uneducated or unscrupulous collectors. Gardeners should be aware that plants offered for sale have almost certainly been dug from the wild, threatening the survival of this species in nature. Other risks to this species include habitat loss from heavy timber harvest. Partial canopy removal can benefit this species, if done carefully.



Showy Lady's-slipper, Maine Natural Areas Program

Swamp fly-honeysuckle (*Lonicera oblongifolia*) is a shrub of Special Concern in Maine, where it grows in bogs and wet woods, specifically open areas of cool cedar swamps underlain by limestone. This particular habitat requirement results in the potential for rarity in the state. The shrub grows to 5 feet (1.5m) high and has small hairs on its branches. Older stems may have shredding bark. The yellow, two-lipped flowers are borne in pairs, as are the red, fleshy berries. A similar common species, mountain fly-honeysuckle, grows in similar habitats but has blue berries. A small population of this species occurs in this focus area northeast of White Pond.

CONSERVATION CONSIDERATIONS

- » Forested buffers along the St. John River serve several important functions. They decrease erosion and nutrient runoff, help prevent the spread of invasive plants, and provide habitat for some rare plant species. These buffers also provide valuable riparian habitat for many wildlife species. Unchecked erosion can cause formerly stable banks to slump and completely wash away under heavy runoff conditions. Maintaining or restoring a healthy and wide buffer of natural forest is perhaps the single most important action that can be taken to protect the integrity of the St. John River ecosystem.
- » The health of the St. John River ecosystem and the survival of its rare plants depend on the area's hydrology and water quality. Dam construction and other human activities that disrupt the natural cycle of spring flooding and ice-scouring could have devastating consequences for the rich diversity of rare plant species that are found in this focus area. Intensive timber harvesting, vegetation clearing, soil disturbance, road building, and development on buffering uplands can result in greater runoff, sedimentation, and other non-point sources of pollution that degrade water quality.

- » Recreational use of the river corridor can have negative impacts if not carefully managed. No vehicular traffic should be allowed along the riverbank. Traveling along the river by foot or canoe instead of vehicle can help prevent erosion and protect plant communities. Education of recreational boaters can help to minimize impacts from camping and day use along the riverbank.
- » Intact, naturally vegetated buffers of 250 feet or more should be maintained around known populations of rare plants.
- » Preserving the natural communities and other sensitive features within the focus area will be best achieved by working to conserve the integrity of the larger natural systems in which these features occur. This can be achieved through management planning on state-owned lands and encouraging sustainable forest management on remaining actively managed private lands. Maintaining healthy forests on nearby lands will help to protect the water quality and ecological integrity of the river and wetlands and to provide habitat connectivity for wildlife using the focus area.
- » The integrity of wetlands and the processes and life forms they support are dependent on the water quality and hydrology of the site. 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. These effects could have devastating impacts on the Quebec emerald dragonfly and the suite of rare plants found in the fen system.
- » Spraying of pesticides, especially insecticides, near Quebec emerald habitat should be avoided. If aerial spraying is

planned, wide buffers (1/2 mile) should be flown around areas of known habitat.

- » Wood turtles move back and forth between rivers, riparian habitat, and upland areas to bask, forage, and nest. They are known to move long distances (commonly 2-3 miles) up and downstream throughout their active season (early spring to fall). Roads, development, and other human activities can form barriers to turtle movement, and may even kill enough adult turtles to threaten the viability of a population. As a result, habitat connectivity is crucial to the success of this species. Maintaining intact riparian corridors and limiting habitat fragmentation from new roads or development within known turtle habitat is important for the conservation of this species. Forestry activities may be compatible with wood turtle conservation if appropriate practices are followed within a 330 foot wide forested riparian management zone for 2.5 miles upstream and 2.5 miles downstream of any documented wood turtle occurrences. MDIF&W can provide detailed guidance on forestry activities within this zone.
- » Improperly sized culverts and other stream crossing structures can impede movement of fish and aquatic invertebrates effectively fragmenting local aquatic ecosystems and ultimately leading to local extirpation of some species. Future management should maintain or restore the sites natural hydrology.
- » 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.



English Sundew, Maine Natural Areas Program



Ringed Boghaunter, B. Nikula

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank	
Animals	Quebec Emerald	<i>Somatochlora brevicincta</i>	SC	S2	G4	
	Wood Turtle	<i>Glyptemys insculpta</i>	SC	S4	G4	
	Ringed Boghaunter	<i>Williamsonia lintneri</i>	T	S1	G3	
Plants	Bog Bedstraw	<i>Galium labradoricum</i>	SC	S2	G5	
	Canada Burnet	<i>Sanguisorba canadensis</i>	T	S1	G5	
	English Sundew	<i>Drosera anglica</i>	E	S1	G5	
	Livid Sedge	<i>Carex livida var. radicaulis</i>	SC	S2	G5T5	
	Low Spike-moss	<i>Selaginella selaginoides</i>	T	S1	G5	
	Marsh Valerian	<i>Valeriana uliginosa</i>	SC	S2	G4Q	
	Mistassini Primrose	<i>Primula mistassinica</i>	SC	S3	G5	
	Moor Rush	<i>Juncus stygius ssp. americanus</i>	SC	S2	G5T5	
	Northern Bog Sedge	<i>Carex gynocrates</i>	SC	S2	G5	
	Northern Comandra	<i>Geocaulon lividum</i>	SC	S3	G5	
	Showy Lady's-slipper	<i>Cypripedium reginae</i>	T	S3	G4	
	Sparse-flowered Sedge	<i>Carex tenuiflora</i>	SC	S3	G5	
	Swamp Fly-honeysuckle	<i>Lonicera oblongifolia</i>	SC	S3	G4	
	Natural Communities	Circumneutral Fen	Shrubby cinquefoil - sedge circumneutral fen		S2	G2G3
		Unpatterned Fen Ecosystem	Unpatterned fen ecosystem		S4	GNR

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.