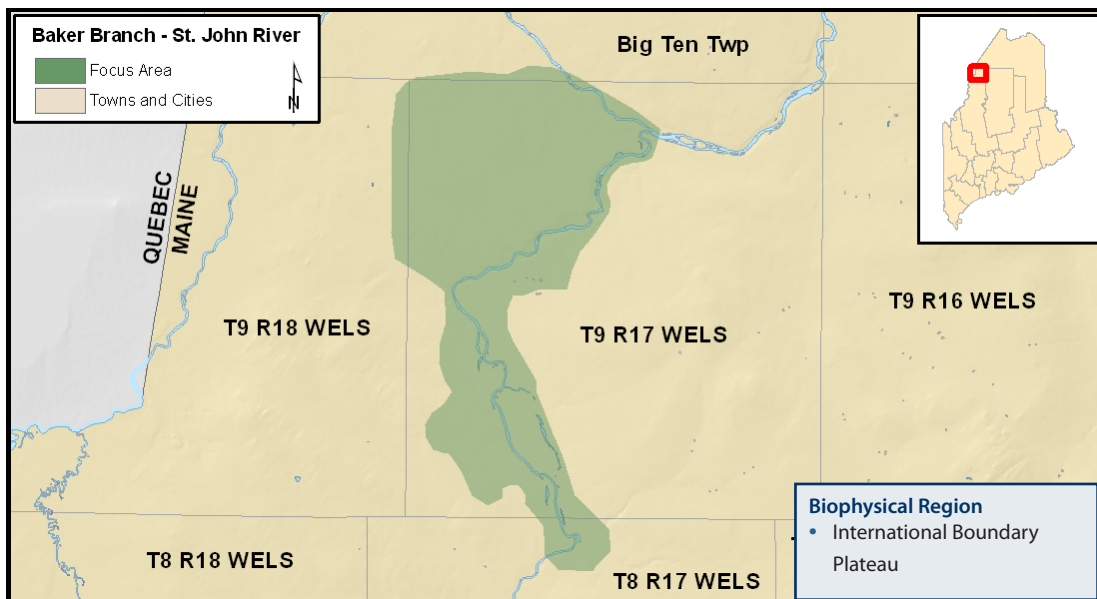
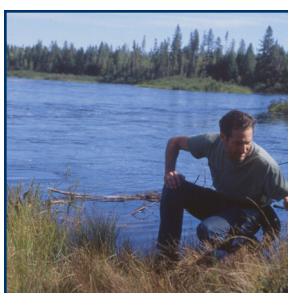


## Baker Branch - St. John River



### WHY IS THIS AREA SIGNIFICANT?

The Upper St. John River, including the Baker Branch, 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 Upper St. John River corridor supports one of the highest concentrations of rare plants in Maine, as a result of the unusual processes that shape its ecology. This Focus Area supports two rare plant populations and includes five exemplary ecosystems and natural communities. It also provides habitat for the rare wood turtle, and over 700 acres of Significant Wildlife Habitat for waterfowl and wading birds.

### OPPORTUNITIES FOR CONSERVATION

- » Maintain wide forested buffers along the river banks and stream corridors.
- » 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 around the focus area.

For more conservation opportunities, visit the Beginning with Habitat Online Toolbox: [www.beginningwithhabitat.org/toolbox/about\\_toolbox.html](http://www.beginningwithhabitat.org/toolbox/about_toolbox.html).

### Rare Animals

Wood Turtle

### Rare Plants

Swamp Fly-honeysuckle  
Mistassini Primrose

### Rare and Exemplary Natural Communities

Evergreen Seepage Forest  
Montane Spruce-Fir forest  
Spruce-Fir Wet flat  
Northern hardwood forest  
Black Spruce Bog

### Significant Wildlife Habitats

Inland Wading Bird and Waterfowl Habitat

### Public Access Opportunities

- Upper St. John River, The Nature Conservancy
- Several canoe access sites



*Canoeing the St. John River , The Nature Conservancy*

## **FOCUS AREA OVERVIEW**

This Focus Area encompasses approximately 12 miles of river corridor along the Baker Branch and Southwest Branch of the St. John River in northern Somerset County. Nearly all of the 9,300-acre Focus Area is owned and managed by the Nature Conservancy as part of the Upper St. John River Conservation Project. Much of the land surrounding the Focus Area has been intensively harvested.

The northwest corner of this Focus Area, between the Baker and Southwest Branches, consists of several parallel ridges that run northwest to southeast, with lower, wetter areas in between. The ridges support fingers of hardwood forest, while the lower areas support evergreen seepage forest and wet flats. There are over 3,600 acres of contiguous exemplary natural communities in this area. It is rare in Maine to have large, mature, good quality examples of upland and wetland forest types occurring together on an undisturbed landscape. The hardwood forest on the ridges is mature, and the large expanses of evergreen seepage forest on the slopes constitute an excellent example of this natural community. A population of the rare swamp-fly honeysuckle occurs within the seepage forest.

A portion of this large, contiguous area of exemplary habitat, near the confluence of Southwest and Baker Branches supports a pristine example of a spruce-fir wet flats natural community. This extensive community shows no evidence of past management, and may be virgin forest. Some areas within the community exhibit disturbance from spruce budworm attacks.

Further south along the Baker Branch, several other exemplary forest areas stretch along the west side of the river, north of the Flaws Bogan campsite. These include an exemplary evergreen seepage forest dominated by large, mature northern white cedar. The interior of this stand may be virgin forest.

This southern section of the Focus Area provides over 600 acres of Significant Wildlife Habitat for waterfowl and wading birds. The rare wood turtle has been documented in this area, as well as at another site just downstream from the Focus Area. Wood turtles probably use large stretches of the upper St. John River corridor where there is suitable habitat.

Historically the Baker Branch supported a significant wild brook trout fishery. Muskellunge are now, however, the most prevalent sport fish in the St. John River and have radically

changed conditions for native brook trout. Muskellunge were introduced into Lac Frontier, Quebec in 1970 by government biologists and have now spread throughout the St. John drainage. Smallmouth bass are also now present in the St. John River as the result of an illegal introduction. 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 continue to support resident populations of brook trout.

The Baker Branch is 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 three riverside campsites, and the intact natural communities along the river corridor are an important part of the unique wilderness experience that draws visitors to the river.

### RARE AND EXEMPLARY NATURAL COMMUNITIES

The **black spruce bog**, present in the Focus Area, is characterized by black spruce and/or larch trees over typical bog vegetation of heath shrubs, graminoids, and peat mosses. Tree cover typically includes a sparse overstory of mostly black spruce, with a well-developed layer of small trees (primarily black spruce, larch and fir) and shrubs, such as mountain holly, highbush blueberry, rhodora and sheep laurel. Dwarf shrubs include Labrador tea, while three-seeded sedge characterizes the herb layer.

Forested bogs provide valuable habitat for a range of wildlife species, particularly habitat specialists. Bogs that contain scattered tall larch or snags provide suitable perching and foraging habitat for the olive-sided flycatcher. Similarly, the three-toed woodpecker inhabits bogs with large numbers of dead trees. Palm warblers, common yellowthroats, and northern waterthrushes are specialists that breed primarily in this community type. The bog elfin butterfly populates bogs with black spruce, which it uses as a larval host plant. The western pine elfin may be found in occurrences of this community in northwestern Maine. Thaxter's pinion moth uses larch as one of its larval host plants and may be found here as well.

**Evergreen seepage forests** are communities occurring on or at the base of gentle slopes saturated with cold groundwater. They are dominated by conifers, especially northern white cedar, with moderate to dense canopy cover. Other tree species include a variety of spruce, and possibly balsam fir, red maple, or yellow birch. Water may emerge to form brooks, or may remain underneath the potentially thick layer of herbs and mosses on the forest floor. Shrubs are sparse but may appear in openings.

This community is most common in northern Maine but may occur in smaller patches to the south. In this Focus Area, these forests were found at Flaws Bogan and along Baker Branch. Most known examples have been harvested in the past,

### Ecological Services of the Focus Area

- 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.
- Rare species and communities contribute to regional, statewide and global biodiversity.

### Economic Contributions of the Focus Area

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

especially for spruce. These cool, moist locations may support orchids, some rare, as well as the northern spring salamander, listed as Special Concern in Maine. Further, a variety of birds, such as three-toed woodpecker, may utilize these areas for nesting.

The **northern hardwoods forest** is the dominant hardwood forest community in Maine. A combination of beech, yellow birch, and sugar maple typically forms the majority of the canopy. Other common canopy trees include paper birch, red maple, red oak, and eastern hemlock. Shrubs and herbs are often sparse, with wildflowers such as Canada mayflower, starflower, and bluebead lily among the most common herbs. Although this community is very common in Maine, large undisturbed examples are scarce. This forest type includes valuable timber species and has been extensively harvested over the past two centuries. In this Focus Area, this forest type was is found on several upland ridges.

### CHARACTERISTIC SPECIES

The **wood turtle** (*Glyptemys insculpta*), a species of Special Concern in Maine, has been documented from one site on the Baker Branch in the southern part of the focus area and another site just outside the focus area. 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.

**Mistassini primrose** (*Primula mistassinica*) grows along the river shores in northern Maine. The plant is one of the first to bloom in early spring, its flowers pale pink to deep rose, with a conspicuous yellow eye in the center. The flowers have 5 petals and stand only 2-4 in. (5-10 cm) from the ground, singly or in clusters. The small, toothed leaves form a basal rosette, usually only 1-3cm across. The plant's peak bloom coincides with peak canoeing season along the St. John River, but it is easily overlooked when not in flower. In Maine, it is at the southernmost extent of its range, and prefers the wettest, seepiest spots, such as on gravel or dripping rock ledges along the rivershore. In this Focus Area, hundreds were found on the southern shoreline of the Southwest Branch. The plant is named for Lake Mistassini, Quebec's largest natural lake. It is listed as a species of Special Concern in Maine.



*Mistassini primrose, 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. In this Focus Area, a few stems were found west of the Baker Branch. 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, more common species, mountain fly-honeysuckle, grows in similar habitats but has blue berries.

### 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 that take place on the St. John River 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 may involve working with landowners to encourage sustainable forest management on remaining actively managed private lands near the Focus Area. Maintaining healthy forests on nearby lands will help to protect the water quality and ecological integrity of the Southwest Branch and provide habitat connectivity for wildlife using the Focus Area.

- » 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.
- » Invasive plants and aquatic organisms have become an increasing problem in Maine and a threat to the state's natural communities. Purple loosestrife is already present in portions of the St. John River watershed and Muskellunge are prevalent in the river. Disturbances to soils and natural vegetation and introductions of non-native species to terrestrial and aquatic habitats can create additional opportunities for colonization of invasive species. Landowners and local conservation groups should be made aware of the potential threat of invasive species, of methods to limit establishment, and/or of appropriate techniques for removal. For more information on invasive plants visit: <http://www.maine.gov/doc/nrimc/mnap/features/invasives.htm>.
- » This area includes Significant Wildlife Habitat for waterfowl and wading birds. Vegetation removal, soil disturbance and construction activities where these habitats are documented may require a permit under the Natural Resources Protection Act. Contact the Maine Department of Inland Fisheries and Wildlife for more information.
- » 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.
- » 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.

**RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA**

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Wood Turtle	<i>Glyptemys insculpta</i>	SC	S4	G4
Plants	Mistassini Primrose	<i>Primula mistassinica</i>	SC	S3	G5
	Swamp Fly-honeysuckle	<i>Lonicera oblongifolia</i>	SC	S3	G4
Natural Communities	Black Spruce Bog	Spruce - larch wooded bog		S4	G3G5
	Evergreen Seepage Forest	Cedar - spruce seepage forest		S4	GNR
	Montane Spruce - Fir Forest	Spruce - fir - wood-sorrel - feather-moss forest		S4	G3G5
	Northern Hardwoods Forest	Beech - birch - maple forest		S4	G3G5
	Spruce - Fir Wet Flat	Spruce - fir - cinnamon fern forest		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.