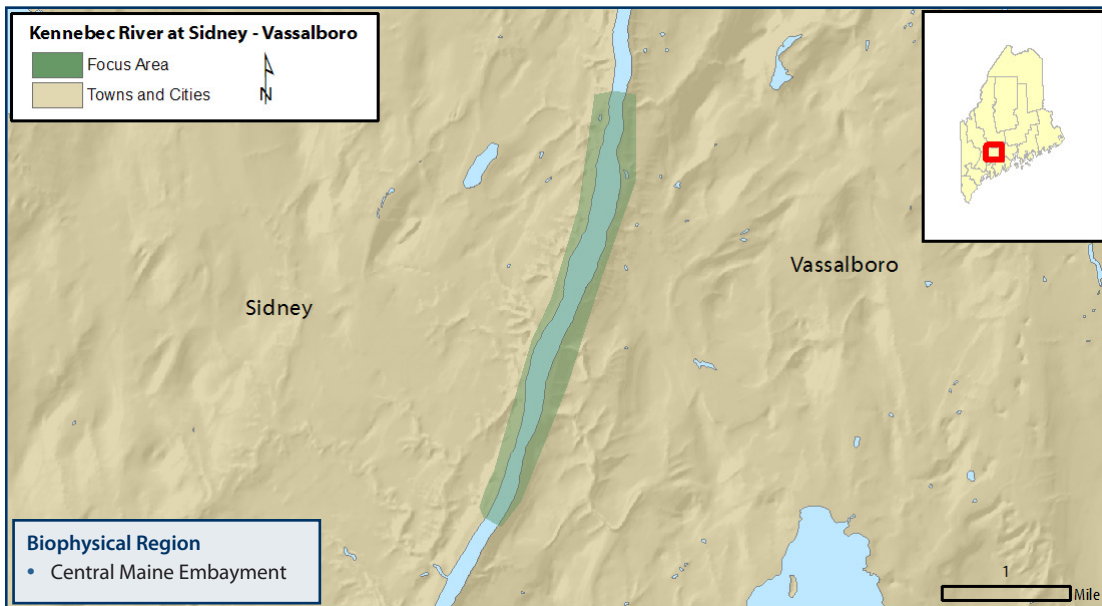


Kennebec River at Sidney-Vassalboro



WHY IS THIS AREA SIGNIFICANT?

This stretch of the Kennebec River in Sidney and Vassalboro supports several different habitats and various rare plants and animals. The uplands, relatively undeveloped shoreline and aquatic habitat host bald eagle, upland sandpiper, rare freshwater mussels and Atlantic salmon as well as several rare plants.

OPPORTUNITIES FOR CONSERVATION

- » Educate recreational users about the ecological and economic benefits provided by the focus area.
- » Encourage best management practices for forestry, vegetation clearing, and soil disturbance activities near significant features.
- » Work with willing landowners to permanently protect undeveloped areas and significant features.
- » Monitor and remove invasive plant populations.
- » Encourage landowners to maintain enhanced riparian buffers.

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

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Rare Animals

- Atlantic Salmon
- Bald Eagle
- Tidewater Mucket
- Upland Sandpiper
- Yellow Lampmussel

Rare Plants

- Awnead Sedge
- Narrow-leaf Arrowhead
- Water Stargrass

Rare and Exemplary Natural Communities

None Documented

Significant Wildlife Habitats

None Documented

Public Access Opportunities

- Public boat ramp off Route 104 in Sidney, located just up river of this site



Kennebec River, Maine Natural Areas Program

FOCUS AREA OVERVIEW

Together with the adjacent uplands and relatively undeveloped shoreline, the half-mile or so reach of the Kennebec River in Sidney and Vassalboro is not one particular habitat, but rather several different habitats that support various rare plants and animals. On the rich alluvial soils of the Kennebec River shores, rare plants characteristic of enriched floodplain soils have been found including water stargrass, awned sedge and narrow leaf arrowhead. These records indicate the need for further inventory. Several other Kennebec River floodplain herbs may be present and should be searched for including wild garlic, showy orchis, and wild ginger, etc.

Eagles are regularly seen along this stretch of the river. Nesting has been reported intermittently since the 1940s and was first officially documented here in 1996 with a single nest between woodland patches along the outlet of Lily Pond. Eagles nesting here have exhibited productivity higher than the statewide average since that time. Resident and transient eagles use the shores on both sides of the river.

In the river itself, the tidewater mucket and yellow lampmussel, both rare freshwater mussels, have been documented. Since the removal of the Edwards Dam, the continued exis-

tence of these mussels here should be investigated as they may be elsewhere up and down the river.

Just over 6 km of Atlantic salmon spawning and rearing habitat have been documented in this reach of the Kennebec River. Atlantic salmon are protected because of their Endangered status, however, other popular recreational fisheries are present here, including brook trout and landlocked salmon.

West of the river itself, between the River Road, the Lyons Road, and the interstate, is an area of upland sandpiper habitat. This grassland bird is a rarity throughout the northeast. At least three pairs of upland sandpipers nest here and do so consistently, which represents a fairly significant habitat. Other upland sandpiper nesting areas in Maine are chiefly in the sandplain grasslands of York County or the blueberry barrens Downeast, so this occurrence in a central Maine hayfield is unique. Along with the “uppies” here are meadowlarks, bobolinks, and savanna sparrows, which are also of some concern because of recent population declines regionally.

CHARACTERISTIC SPECIES

Tidewater mucket (*Leptodea ochracea*) and **yellow lampmussel** (*Lampsilis cariosa*) are freshwater mussel species. Freshwater mussels require clean water and certain flow and substrate conditions. They also have a unique life cycle that depends on specific fish species as larval hosts. Maine plays an important role in the conservation of freshwater mussels. With some of the most unspoiled aquatic ecosystems in eastern North America, Maine has some of the most significant remaining populations of several nationally rare freshwater mussel species. Maintaining water quality and undisturbed aquatic habitats is essential to maintaining these 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 in Maine. Bald eagles and their nests are protected by the U.S. Fish and Wildlife Service under the Bald and Golden Eagle Protection Act.

Upland sandpiper (*Bartramia longicauda*), a state threatened species, require large open fields (greater than 150 acres). Most of the state's population nests in downeast blueberry barrens. This species was more common when a higher percentage of the state was in farmland. As grasslands disappeared and converted to forests, upland sandpiper populations declined. They are now among the rarest of grassland birds in the Northeast. Maine has the largest upland sandpiper population in the region and plays an important role in the conservation of this species. Habitat protection, enhancement and management are key to species' recovery.

The Kennebec River along this stretch supports habitat for wild **Atlantic salmon** (*Salmo salar*). Atlantic salmon are an anadromous species, spending most of their adult life at sea, returning to their natal freshwater rivers to spawn. They require free flowing, cool, clear rivers to migrate to suitable spawning and nursery habitats found in upper river reaches. Populations of Atlantic salmon dramatically declined as culverts and dams blocked fish passage and water quality declines in streams and rivers limited habitat quality.

Awned sedge (*Cyperus squarrosus*) can be difficult to identify without careful examination of microscopic features and an overall knowledge of the characteristics of the genus *Cyperus*. *Cyperus* species are identified by their 2-ranked scales of spikes, triangular stems, terminal inflorescences, and styles deciduous from the achene. *Cyperus squarrosus* is an annual with a cespitose habit. It is recognized by its 3 styles, 1 stamen, trigonous achene, and oblong-lanceolate, conspicuously ribbed, recurved floral scales. Degradation to river shores could be detrimental to populations.

Ecological Services of the Focus Area

- Contributes to regional biodiversity by providing habitat for rare species
- Provides an important habitat linkage

Economic Contributions of the Focus Area

- Offers a scenic viewshed
- Conveys floodwaters
- Supports valuable recreational fisheries

Narrow-leaf arrowhead (*Sagittaria filiformis*) is a submerged aquatic perennial with submersed and floating leaves. The floating leaves are linear-ovate to ovate in shape and 0.5 cm wide. The long, submerged, ribbon-like leaves are usually over 30 cm in length. The petiole, which connects the leaf to the stem, is flattened. The flowers are white, with 3 petals, and are borne in racemes with 2-4 whorls of flowers. Invasive aquatic plants or impoundment could pose a threat to populations.

Water stargrass (*Zosterella dubia*) is a perennial aquatic plant that usually grows in shallow water with its stem submersed. The leaves are grass-like and up to 15 cm long. The flowers are pale yellow, and the fruits are black. It can be recognized vegetatively by its alternate, narrow, parallel-sided leaves with many fine veins. The leaves lack a more prominent central vein. It is important to maintain water quality in the lakes and ponds in which it occurs.

CONSERVATION CONSIDERATIONS

- » Information on the location and extent of the rare plant and rare mussel populations should be updated. Additional surveys along the river could turn up new locations for these species.
- » Freshwater mussels are sensitive to contaminants and changes in habitat. 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.

- » Improperly sized crossing structures such as culverts can impede movement of fish and aquatic invertebrates effectively fragmenting local aquatic ecosystems and ultimately leading to local extirpation of some species. Future management activity should avoid additional impacts to the site's hydrology.
- » The upland sandpiper habitat is currently being well managed by the private landowner. The most important consideration for these grassland-nesting birds is a large enough area of habitat—generally at least 100 acres—and when during the year the fields are mowed. Mowing in June, as is often done in active hayfields, will not allow the birds to fledge young. If mowing can be put off until at least mid-July, most of the nesting birds should be able to fledge a brood.
- » Invasive plants and aquatic organisms have become an increasing problem in Maine and a threat to the state's natural communities. Disturbances to soils and natural vegetation and introductions of non-native species to terrestrial and aquatic habitats can create opportunities for colonization. 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>.
- » 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 even cause adults to abandon the nest. In general it is recommended that a 330-foot radius be left undisturbed buffer around an eagle nest during any kind of land-clearing or timber harvest activity. Habitat protection within ¼ mile radius of a nesting site is another significant measure that can help support nesting eagles. Consult with a MDIFW or USFWS biologist prior to planning any activity that may disturb the forest around an eagle nest. Bald eagles and their nest sites are protected by the USFWS under the Bald and Golden Eagle Protection Act. Certain activities may require a permit.
- » Appropriate conservation strategies for this area as a whole include open space treatments, conservation easements, and fee ownership.



Yellow Lampmussel, Ethan Nedeau



Upland Sandpiper, Maine Dept. of Inland Fisheries and Wildlife

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	Atlantic Salmon	<i>Salmo salar</i>	E		
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	S4B,S4N	G5
	Tidewater Mucket	<i>Leptodea ochracea</i>	T	S2	G3G4
	Upland Sandpiper	<i>Bartramia longicauda</i>	T	S3B	G5
	Yellow Lampmussel	<i>Lampsilis cariosa</i>	T	S2S3	G3G4
Plants	Awned Sedge	<i>Cyperus squarrosus</i>	SC	S2	G5
	Narrow-leaf Arrowhead	<i>Sagittaria filiformis</i>	SC	S2	G4G5
	Water Stargrass	<i>Zosterella dubia</i>	SC	S3	G5
Natural Communities	None Documented				

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) or because some aspect of its biology makes it especially vulnerable to extirpation.
- 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.