

# Lower Sheepscot River



## WHY IS THIS AREA SIGNIFICANT?

The Sheepscot River in Alna and Newcastle has long been recognized as an area of ecological significance. This largely intact corridor of fresh, brackish, and salt marshes, though well represented nearby in the Kennebec Estuary, is uncommon elsewhere in Maine. Moreover, the Sheepscot River wetland complex supports nesting bald eagles, several rare plant species, a rare freshwater mussel species, and uncommon salt marsh sparrows.

## OPPORTUNITIES FOR CONSERVATION

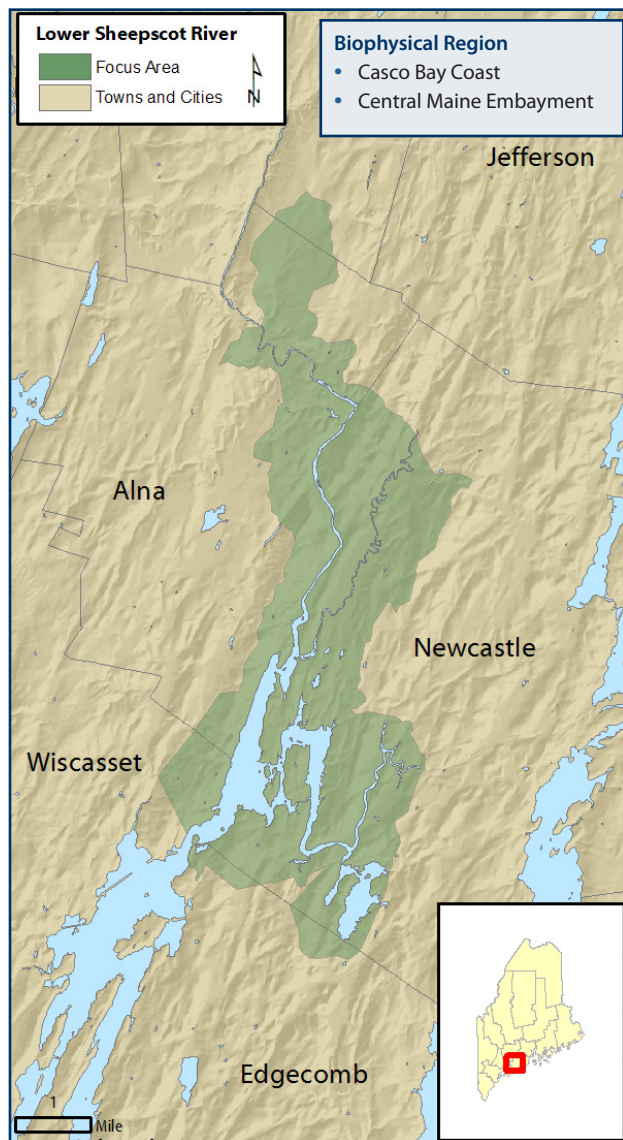
- » Educate recreational users about the ecological and economic benefits provided by the focus area.
- » Encourage best management practices for forestry, vegetation clearing, and soil disturbance activities near significant features.
- » Encourage town planners to improve approaches to development that may impact focus area functions.
- » Restore aquatic habitat connectivity by repairing improperly installed culverts and stream crossing structures.
- » 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.

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).

### Public Access Opportunities

- Sherman Lake Wildlife Management Area, MDIFW
- Sherman Lake Picnic Area, MDOT
- Marsh River Preserve, SVCA

*Photo credits, top to bottom: ME Natural Areas Program, ME Natural Areas Program, Ethan Nedeau, Paul Cyr, Tom Arter*



### Rare Animals

- |               |                                |
|---------------|--------------------------------|
| Brook Floater | Atlantic Salmon                |
| Brown Snake   | Wood Turtle                    |
| Least Bittern | Saltmarsh Sharp-tailed Sparrow |

### Rare Plants

- |                      |                          |
|----------------------|--------------------------|
| Estuary Bur-marigold | Pygmyweed                |
| Horned Pondweed      | Saltmarsh False-foxglove |
| Mudwort              | Spongy Arrow-head        |
| Parker's Pipewort    |                          |

### Rare and Exemplary Natural Communities

- Brackish Tidal Marsh

### Significant Wildlife Habitats

- Inland Wading Bird and Waterfowl
- Tidal Wading Bird and Waterfowl
- Deer Wintering Areas





Northward view of the Sheepscot River from the Sheepscot Village Bridge, Sheepscot Valley Conservation Association

## FOCUS AREA OVERVIEW

From north to south, the river's habitats grade from freshwater riverine in Alna Village, to freshwater tidal near Dock Road, to brackish and salt marshes further downriver. In the upper section of the river, dominant freshwater marsh plants include pickerelweed (*Pontederia cordata*), arrow-head (*Sagittaria latifolia*) and bulrushes (*Schoenoplectus pungens* and *S. tabernaemontanii*). Further to the south, dominant salt-marsh species include salt-marsh bulrush (*Bolboschoenus maritimus*), cordgrass (*Spartina alterniflora*), and salt hay (*Spartina patens*). The sharpest area of transition is through 1/4 mile of shallow stream riffles, where the river grade drops a few feet.

The freshwater portion of the River, within and upstream of Alna village, supports the globally uncommon **brook floater mussel** (*Alasmidonta varicosa*). Brook floaters were found in two locations and may occur where suitable gravel/cobble habitat exists in the river. Currently listed as a Special Concern species in Maine, the brook floater is very uncommon and rarely found in abundance at any site. It is also declining throughout its range, and Maine may hold some of the last best populations of this species. The freshwater portion of the focus area also provides spawning and rearing habitat for the Federally Endangered **Atlantic salmon** (*Salmo salar*).

Rare plants, including Parker's pipewort (*Eriocaulon parkeri*), estuary bur marigold (*Bidens hyperborea*), pygmyweed (*Crassula aquatica*), mudwort (*Limosella australis*), spongy arrowhead (*Sagittaria calycina* var. *spongiosa*) and horned pondweed (*Zannichellia palustris*), are scattered throughout the muddy riverbanks of the freshwater tidal section, from Dock Road in Alna southward for over a mile.

In the southern portions of the focus area, the 150-acre Deer Meadow brackish tidal marsh, located off the Marsh River in Newcastle, supports nearly 1,000 rare salt marsh false foxglove (*Agalinis maritima*) plants in several small sub-populations. Other typical salt and brackish marsh plant species here include black rush (*Juncus gerardii*), the sedge *Carex paleacea*, common arrow-grass (*Triglochin maritimum*), saltmarsh bulrush (*Bolboschoenus maritima*), common three-square (*Schoenoplectus pungens*), silverweed (*Argentina anserina*), and saltmeadow cordgrass. Smooth cordgrass lines the banks of the marsh and gives the appearance of monotypic stands.

In addition to the area's significance as rare plant, mussel and salmon habitat, it also supports rare bird species. **Bald eagle** (*Haliaeetus leucocephalus*) nests have been active between

the Sheepscot Reversing Falls and railroad bridge. Moreover, two brackish tidal marshes here (Dyer River marsh and Deer Meadow marsh) were found by MDIFW biologists to support both the **salt marsh sharp-tailed sparrow** (*Ammodramus caudacutus*) and Nelson's sharp-tailed sparrow (*Ammodramus nelsoni*). Both bird species are uncommon in Maine, the former listed as Special Concern, and both are restricted to salt and brackish marshes. MDIFW biologists also detected nearly 20 other species in these salt marshes.

**Tidal Wading Bird and Waterfowl Habitat** has been mapped along the river and around the marshes of much of the tidal portion of the focus area. These areas provide undisturbed nesting habitat and undisturbed, uncontaminated feeding areas and are essential for maintaining viable waterfowl and wading bird populations. Smaller areas of **Inland Wading Bird and Waterfowl Habitat** and **Deer Wintering Area** have been mapped as well. These areas are protected as Significant Wildlife Habitat under the Natural Resources Protection Act.

### RARE AND EXEMPLARY NATURAL COMMUNITIES

**Brackish tidal marshes** contain both freshwater and brackish water species, often in bands corresponding to tidal exposure. Tall rushes and bulrushes often predominate over extensive mid-elevation flats. At the lower elevations, rosette-forming herbs, such as lilaepsis and tidal arrowhead, may be common on the mudflats. Near the high tide line, there may be a fairly narrow zone of muddy gravel or rock shore sparsely vegetated with low herbs, including some rare species such as Long's bitter-cress or water-pimpernel. Sweetgale and poison ivy are often present at the upper fringes of the marsh, at or above the tidal reach.

Brackish marshes are important nesting habitat for several sparrows: Nelson's sharp-tailed sparrow and two uncommon species, the saltmarsh sharp-tailed sparrow and the seaside sparrow. These wetlands also provide foraging habitat for a large number of wading birds including rare species such as the great egret and glossy Ibis. The New England siltsnail inhabits coastal marshes and small tidal rivers where the water ranges from fresh to upper brackish. The spartina borer moth, whose historic range was along the immediate coast throughout New England, likely inhabited tidal marshes with sizeable populations of freshwater cordgrass, its larval host plant.

### CHARACTERISTIC SPECIES

The **brook floater** (*Alasmidonta varicosa*) is a freshwater mussel of Special Concern in Maine that is found among rocks, gravel, and sand in creeks and small rivers. In Maine, this species is generally found among rooted aquatic vegetation in nutrient-poor streams. 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 may hold some of the best remaining populations of this species anywhere in its range.

#### Ecological Services of the Focus Area

- Nursery for juvenile fish and shellfish.
- Supports regional biodiversity by providing habitat for rare plants, animals, and natural communities.
- Major feeding area for myriad bird species.

#### Economic Contributions of the Focus Area

- Supports commercial forestry opportunities.
- Attracts tourism for wildlife observation, paddling, hunting, and angling.
- Contributes to recreational value of the area, including nearby coastal areas, by protecting water quality, fisheries, and wildlife habitat.

**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 continue to be protected by the USFWS under the Bald and Golden Eagle Protection Act.

The Sheepscot River is one of eight rivers remaining in the US to support a wild population of the Endangered **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.

### CONSERVATION CONSIDERATIONS

- » Although most of the rivershore below the Dock Road Bridge is narrow and without much marsh expanse, it is undeveloped and devoid of invasive species.
- » In general, threats to aquatic plants and invertebrates include hydrologic alteration (from changes in water flow or impoundment of waterways), point source pollution, development of adjacent uplands and associated water quality impacts, invasive species such as purple loosestrife, and poor timber harvesting practices.



- » Potential impacts from residential, commercial, and industrial development of the shoreline are all greatest where road access and town zoning are favorable to such development.
- » With regard to timber harvesting, strict adherence to Shoreland Zoning guidelines and Maine Forest Service Best Management Practices should help to minimize impacts to adjacent wetlands. In some areas of steep slopes or susceptible soils, it may be wise to avoid harvesting entirely within the shoreland 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. Dams and poorly functioning culverts were a leading cause of the decline in Atlantic salmon populations. Future management should maintain or restore the sites natural hydrology.
- » Freshwater mussels are very 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 alter habitat type (including substrate, flow rate, water levels) should be avoided. 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. Another potential threat is introduction of exotic species, such as the zebra mussel, which can out-compete and decimate native mussel populations. The local public should be informed on how to prevent accidental introduction of this invasive species into the Sheepscot River watershed. Finally, an outreach program for freshwater mussel conservation in the Sheepscot River watershed would be extremely beneficial to the conservation of freshwater mussels.
- » 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 biologist prior to planning

any activity that may disturb the forest around an eagle nest. Bald eagle nests are protected by the USFWS under the Bald and Golden Eagle Protection Act. Certain adjacent activities may require a permit.

- » This area includes Significant Wildlife Habitat for waterfowl and wading birds and wintering deer. Both land managers and private landowners should follow best management practices with respect to forestry 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. Consult with a MDIFW biologist prior to planning any activity that may disturb the forest around an Inland or Tidal Wading Bird and Waterfowl Habitat or Deer Wintering Area.
- » Current projections suggest sea level will rise at least 2 feet in the next century due to changing climate and warming temperatures. As sea levels rise, coastal habitats will begin to migrate inland. In areas where this inland migration is blocked by development these habitats will be lost. Conservation of low-lying, undeveloped uplands where coastal marshes, beaches, and other intertidal natural communities can migrate inland with sea level rise should be promoted.
- » Appropriate conservation strategies include tree growth and open space tax treatments, conservation easements, and fee ownership.



Marsh River, Sheepscot Valley Conservation Association

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](http://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	Brook Floater	<i>Alasmidonta varicosa</i>	T	S3	G3
	Brown Snake	<i>Storeria dekayi</i>	SC	S3	G5
	Least Bittern	<i>Ixobrychus exilis</i>	E	S2B	G5
	Wood Turtle	<i>Clemmys insulpta</i>	SC	S4	G4
	Saltmarsh Sharp-tailed Sparrow	<i>Ammodramus caudacutus</i>	SC	S3B	G4
	Atlantic Salmon	<i>Salmo salar</i>	E		
Plants	Estuary Bur-marigold	<i>Bidens hyperborea</i>	SC	S3	G4
	Horned Pondweed	<i>Zannichellia palustris</i>	SC	S2	G5
	Mudwort	<i>Limosella australis</i>	SC	S3	G4G5
	Parker's Pipewort	<i>Eriocaulon parkeri</i>	SC	S3	G3
	Pygmyweed	<i>Crassula aquatica</i>	SC	S2S3	G5
	Saltmarsh False-foxglove	<i>Agalinis maritima</i>	SC	S3	G5
Natural Communities	Spongy Arrow-head	<i>Sagittaria calycina var. spongiosa</i>	SC	S3	G5T4
	Brackish Tidal Marsh	Brackish tidal marsh		S3	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) 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.