Beginning with HABITAT

Focus Areas of Statewide Ecological Significance

Salmon Brook Lake and Perham Wetlands

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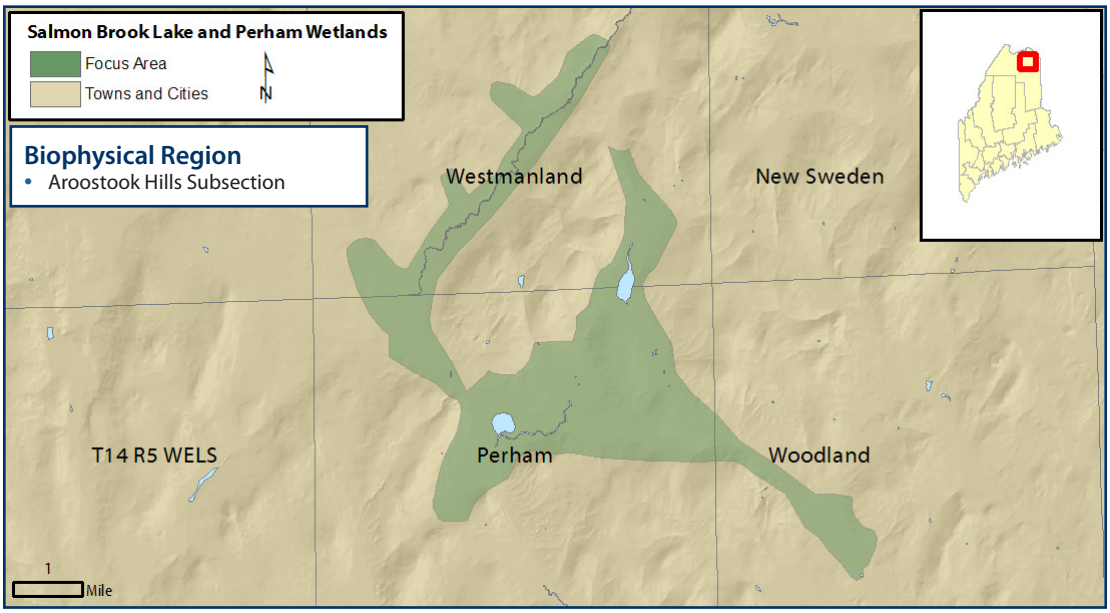

WHY IS THIS AREA SIGNIFICANT?

The Salmon Brook Lake and Perham Wetlands Focus Area is located in northeastern Aroostook County in an area where limestone bedrock has created relatively high pH soils. These conditions support a number of significant natural features including circumneutral fens, rich northern white cedar swamps, and a variety of rare plant and animal species.

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.
» Maintain intact forested buffers along water bodies and wetlands to protect water quality and provide valuable riparian habitat for wildlife.
» Maintain natural hydrologic regime by avoiding drainage or impoundment of the wetlands, streams or adjacent water bodies.
» Work with willing landowners to permanently protect undeveloped areas and significant features.

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

Rare Animals
Clayton's Copper
Mystery Vertigo
Sedge Wren
Six-whorl Vertigo

Rare Plants
Capillary Sedge
Dioecious Sedge
Hoary Willow
Horned Beak-rush
Lapland Buttercup
Livid Sedge
Marsh Valerian
Northern Bog Sedge
Prairie Sedge
Pygmy Water-lily
Showy Lady's-slipper
Small Round-leaved Orchis
Sparse-flowered Sedge
Swamp Fly-honeysuckle
White Adder's-mouth

Significant Wildlife Habitats
Inland Waterfowl and Wading Bird Habitat
Deer Wintering Area

Rare and Exemplary Natural Communities
Black Spruce Bog
Circumneutral Fen
Northern White Cedar Swamp
Sedge-Heath Fen
Unpatterned Fen Ecosystem

Public Access Opportunities
- Aroostook Valley Rail Trail, Salmon Brook Lake Bog, MBPL
- Perham Bog Preserve, Woodland Bog Preserve, TNC

Salmon Brook Lake, Maine Natural Areas Program

FOCUS AREA OVERVIEW

At the heart of this focus area is the state-owned Salmon Brook Lake Unit characterized by extensive wetlands and numerous rare plant populations. The 1,706 acre unit hosts six exemplary natural communities and six rare plant populations including a 1,055 acre Ecological Reserve surrounding Salmon Brook Lake—a shallow, 50 acre lake with a maximum depth of five feet. In addition to the Salmon Brook Lake Unit, the focus area also includes the Woodland Bog Preserve in the southeastern section of the focus area and the Perham Bog Preserve located in the northwestern section of the focus area. Both preserves are owned by the Nature Conservancy.

RARE AND EXEMPLARY NATURAL COMMUNITIES

The Salmon Brook Lake Unit has a number of exemplary forested and open wetland natural communities. An **Unpatterned Fen Ecosystem** dominates the unit. Within this ecosystem are several exemplary natural communities representative of calcareous conditions. A **Shrubby Cinquefoil – Sedge Circumneutral Fen** is located north of the lake. This two acre, high quality fen is surrounded by spruce and cedar swamps. Some areas are dominated by low shrubs such as leatherleaf, bog rosemary, and sweet gale. In other areas, sedges such as slender sedge are common. Swamp fly honeysuckle, small round-leaved orchis, and showy lady's slipper, all rare plant species, occur in a Spruce – Fir – Cinnamon Fern Forest north of Salmon Lake and just east of this circumneutral fen. The **small round-leaved orchis** *(Amerorchis rotundifolia)* is rare in Maine and even within the New England region, reaching the edge of its range in northern Maine. Most of the occurrences of this plant have been found in Aroostook County and even these have been limited to less than a dozen locations.

Surrounding the lake is a 65-acre **Sedge-Leatherleaf Fen Lawn**. This natural community has leatherleaf and sweet gale in the shrub layer with slender sedge dominant in the herb layer. This occurrence is a pristine example of this community type and it supports a population of the rare **marsh valerian** *(Valeriana uliginosa)* growing in the transition zone from forested to open wetland. A **Spruce – Larch Wooded Bog** is located south of the lake with its western half dominated by larch and its eastern half dominated by black spruce and fir. A mature **Northern White Cedar Swamp** is found west of Salmon Lake and is dominated by cedar with small amounts of fir, black spruce, and larch. A second, smaller Northern White Cedar Swamp lies east of the lake and borders the east side of the stream.

Pygmy water-lily *(Nymphaea leibergii)* grows in the Salmon Brook Lake outlet stream. This white-flowered water-lily prefers cold, rich waters and reaches the southern and eastern limit of its range in Maine. Continued stable water levels will help ensure the health of this population.

The southwestern portion of the focus area hosts a **Cedar – Spruce Seepage Forest**. Cedar dominates this community and both shrub and herb layers are poorly developed. Canopy closure is 75%, and some cedars in the area are over 200 years old. **Lapland buttercup** (*Ranunculus lapponicus)*, a threatened plant species, is found here and in several locations throughout the focus area. Another threatened plant, the **small round-leaved orchis**, occurs in the southwestern portion of the focus area, outside of the cedar seepage forest.

The Woodland Bog Preserve located in the southeastern section of the focus area includes a small high quality S**hrubby Cinquefoil – Sedge Circumneutral Fen**. This community includes a number of rare plant species including **prairie sedge** *(Carex prairea)*, **dioecious sedge** *(Carex sterilis)*, and **hoary willow** *(Salix candida)* as well as several rare plant species also found in other parts of the focus area.

CHARACTERISTIC SPECIES

The **sedge wren** *(Cistothorus platensis)*, listed as Endangered in Maine, is known to breed in the Salmon Lake Brook Unit. Sedge wrens breed in freshwater meadows dominated by grasses and sedges, and in grassy, upland borders of freshwater marshes dominated by sedges. As a result of wetland loss, reforestation of farmlands, and a shift to high-intensity agriculture, sedge wren populations have declined throughout the region. Maine is the northeastern limit of the sedge wren's range where, although it can occur almost statewide, it is rare and distributed patchily throughout the state. Conservation of potential breeding habitat is essential to the recovery of this species.

Clayton's Copper Butterfly, Jonathan Mays

Ecological Services of the Focus Area

- Is an important component of regional biodiversity.
- Serves as an important large block of undeveloped habitat for a wide range of species including rare plants, waterfowl, wading birds, deer, and other wildlife.

Economic Contributions of the Focus Area

- Provides a scenic viewshed.
- Attracts tourism for wildlife observation, paddling, hunting, and angling.
- Provides high value forest products that support the regional economy.
- Serves as a valuable recreational resource for local residents.
- Provides opportunities for research and education.

The **six-whorled vertigo** *(Vertigo morsei)*, also found in the Salmon Brook Lake and Perham Wetlands Focus Area, is perhaps Maine's rarest snail species. This tiny terrestrial snail is less than 4mm in size and is known from only one location in the state, Woodland Bog, which is in the southeastern end of the Salmon Brook Focus Area. This species is an obligate of calcareous wetlands which are rare in Maine. The nearest known populations are on wet shoreline turf in the Mingan Islands along the north side of the Gulf of St. Lawrence in Quebec. Woodland Bog is a hot spot of terrestrial snail diversity, supporting at least 24 species – a very high number relative to other sites that have been surveyed in the state. Another rare snail, the **mystery vertigo** *(Vertigo paradoxa)*, occurs in the area around Salmon Brook, which has also been found to support a fairly high number of terrestrial snail species.

The state endangered **Clayton's copper butterfly** *(Lycaena dorcas claytoni)* has found in the shrubby cinquefoil fen of this focus area. This species is found only in association with its sole larval host plant, the shrubby cinquefoil (*Potentilla fruticosa*). This uncommon shrub requires limestone soils and has a scattered distribution throughout Maine. Although not considered rare, there are relatively few cinquefoil stands large enough to support viable Clayton's copper populations. Clayton's copper is currently known from only eleven sites worldwide - nine in Maine centered in and around northeastern Penobscot county and two sites just over the border in New Brunswick. With the majority of the population located in Maine, the state has an important role in conserving this rare species.

Several long, narrow **Deer Wintering Areas** are located in the eastern portion of the focus area and in places these overlap with **Inland Waterfowl and Wading Bird Habitat**. Forested areas offering important habitat for deer stretch for almost 5 miles along the Little Madawaska River Valley. The highest concentration of Inland Waterfowl and Wading Bird Habitat in the focus area is found in the state-owned Salmon Brook Lake Unit surrounding Salmon Brook Lake.

CONSERVATION CONSIDERATIONS

» The integrity of wetlands and the processes and life forms they support including rare plants and animals are dependent on the maintenance of the current hydrology and water quality 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 that can degrade the high quality natural systems that occur here.

» 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. Conserving the larger systems will help ensure that both common and rare natural features will persist on the landscape in this part of the state.

» Nearly all exemplary natural communities and rare plants mapped within the focus area are contained within existing conservation lands, but the focus area also includes many areas that have yet to be surveyed for these features.

» Logging in the cedar bogs in which the small round-leaved orchid is found may, if properly conducted, not be harmful to the plant. Partial canopy removal could provide increased light to mimic the natural openings in which the plant is usually found. Complete canopy removal, however, would likely bring more drastic habitat changes that could be detrimental. Orchids are popular among some speciality gardeners, and populations of this species are vulnerable to unscrupulous or uneducated collectors. Plants dug from the wild usually do not survive; more importantly, removing these plants harms the natural population and may cause its eventual disappearance. This plant has not been successfully propagated, and any plants offered for sale have almost certainly been dug from the wild.

» 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.

» Research and education are actively encouraged on all state Ecological Reserves. The state has developed a long term ecological monitoring program for Reserves and seeks opportunities to promote research efforts that complement its monitoring program.

Spruce-Larch Wooded Bog, Maine Natural Areas Program

Horned Beak-rush, Maine Natural Areas Program

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	Clayton's Copper	*Lycaena dorcas claytoni*	E	S1	G5T1
	Mystery Vertigo	*Vertigo paradoxa*	SC	SNR	G3G4Q
	Sedge Wren	*Cistothorus platensis*	E	S1B	G5
	Six-whorl Vertigo	*Vertigo morsei*	SC	SNR	G3
Plants	Capillary Sedge	*Carex capillaris*	SC	S2	G5
	Dioecious Sedge	*Carex sterilis*	SC	S3	G4
	Hoary Willow	*Salix candida*	E	S1	G5
	Horned Beak-rush	*Rhynchospora capillacea*	T	S1	G4
	Lapland Buttercup	*Ranunculus lapponicus*	T	S2	G5
	Livid Sedge	*Carex livida var. radicaulis*	SC	S2	G5T5
	Marsh Valerian	*Valeriana uliginosa*	SC	S2	G4Q
	Northern Bog Sedge	*Carex gynocrates*	SC	S2	G5
	Prairie Sedge	*Carex prairea*	T	S1	G5
	Pygmy Water-lily	*Nymphaea leibergii*	T	S1	G5
	Showy Lady's-slipper	*Cypripedium reginae*	T	S3	G4
	Small Round-leaved Orchis	*Amerorchis rotundifolia*	T	S2	G5
	Sparse-flowered Sedge	*Carex tenuiflora*	SC	S3	G5
	Swamp Fly-honeysuckle	*Lonicera oblongifolia*	SC	S3	G4
	White Adder's-mouth	*Malaxis monophyllos*	E	S1	G5
Natural Communities	Black Spruce Bog	Spruce - larch wooded bog		S4	G3G5
	Circumneutral Fen	Shrubby cinquefoil - sedge circumneutral fen		S2	G2G3
	Northern White Cedar Swamp	Northern white cedar swamp		S4	GNR
	Sedge - Heath Fen	Sedge - leatherleaf fen lawn		S4	G4G5
	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.