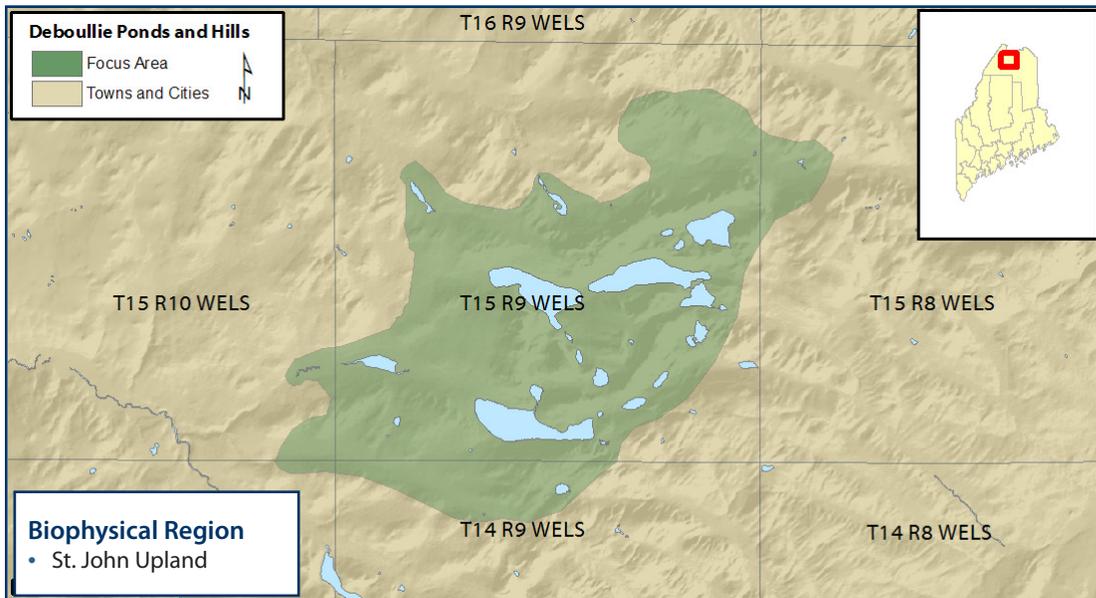
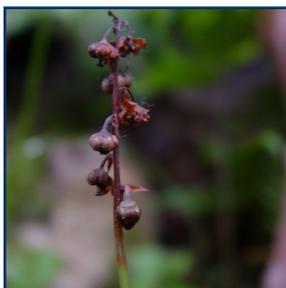


Deboullie Ponds and Hills



WHY IS THIS AREA SIGNIFICANT?

The Deboullie Ponds and Hills Focus Area is a pristine landscape of forest, ponds, dramatic talus slopes, and scenic ridges. It is unusual in northern Maine for its rugged landscape, as well as its ecological values. The area is a valuable recreational resource, providing opportunities for camping, boating, and fishing on remote, scenic ponds, as well as hunting. The focus area supports a concentration of rare plants, animals, and natural communities. It also provides over 300 acres of Significant Wildlife Habitat for inland waterfowl and wading birds. Native brook trout and other important fisheries are found in the area's ponds and streams.

OPPORTUNITIES FOR CONSERVATION

- » Minimize recreational impacts on sensitive shoreline and rock outcrop areas through careful siting of trails, monitoring, and hiker education.
- » Protect sensitive natural features through careful management planning on state-owned lands.
- » Work with landowners to encourage sustainable forest management practices on remaining privately owned forest lands in and around the focus area.
- » Encourage best management practices for forestry activities near wetlands and water bodies, including maintenance of wide riparian buffer zones.
- » Continue to implement the state's monitoring plan on the Ecological Reserve component of the focus area.

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

Rare Animals

- Northern Bog Lemming
- Peregrine Falcon
- Arctic Charr

Rare Plants

- Alpine Rush
- Arctic Sandwort
- Few-flowered Spikerush
- Fragrant Cliff Wood-fern
- Lesser Wintergreen
- Northern Slender Pondweed
- Northern Woodsia
- Showy Lady's-slipper
- Small Round-leaved Orchis
- Smooth Woodsia
- Swamp Fly-honeysuckle

Rare and Exemplary Natural Communities

- Acidic Cliff
- Circumneutral Outcrop
- Cold-air Talus Slope
- Evergreen Seepage Forest
- Lower-elevation Spruce - Fir Forest
- Northern Hardwoods Forest
- Northern White Cedar Swamp
- Riverside Seep
- Spruce Rocky Woodland

Significant Wildlife Habitats

- Inland Waterfowl and Wading Bird Habitat

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Deboullie Ponds and Hills, Maine Natural Areas Program

FOCUS AREA OVERVIEW

This focus area stretches across the Deboullie Public Reserve Unit, in Aroostook County southeast of Allagash. Of the 14,500 acres in the focus area, almost 12,000 acres are included within the Public Reserve Unit, and over 7000 acres of that area are protected as an Ecological Reserve. Ecological Reserves are state-owned lands set aside from active management in order to protect and monitor the state's natural ecosystems. The remainder of the public land is managed for sustainable timber production and recreation. Most of the surrounding landscape is industrial forest land.

The focus area extends from an exemplary northern white cedar swamp community located southwest of the public land unit diagonally across the unit to an exemplary evergreen seepage forest that extends along Rocky Brook on the eastern boundary of the public land unit. This vast stretch of forest, wetlands, hills, and ponds includes nine rare or exemplary natural communities and provides habitat for eleven species of rare plants and three species of rare animals.

Among the ecological highlights of this focus area are the communities and habitats along the pond shores, as well as the cliffs and talus slopes on the south sides of Deboullie and

Public Access Opportunities

- Deboullie, MBPL

Black Mountains. The steep slopes to the north of Deboullie Pond support rare natural communities that include populations of two Threatened and one Endangered plants. The shaded, somewhat calcareous cliffs above the pond support Maine's only known population of the Endangered Arctic sandwort. Deboullie Mountain also supports exemplary lower-elevation spruce-fir forest and spruce rocky woodland communities. The cliffs on the mountain are suitable nesting habitat for the Endangered peregrine falcon.

The focus area includes Deboullie, Gardner, and Togue Ponds, along with about 20 smaller ponds. Both the ponds and the pond shores are ecologically important, supporting valuable native fisheries, as well as rare plant and animal habitat. Four of the ponds in the focus area support populations of land-locked Arctic charr, a species of Special Concern and a Heritage Fish in Maine. Native wild brook trout are found in all of the

major standing and flowing water bodies in the focus area. Like Arctic charr, native wild brook trout are a Heritage Fish in Maine.

Gardner Pond, located to the west of Deboullie Pond, provides habitat for the very rare northern bog lemming found along the southern shore of this pond. Several rare plants were identified along the banks of Gardner Pond including alpine rush, few-flowered spikerush, and northern slender pondweed. Southwest of Gardner Pond, the area around Mud Pond exhibits an exemplary northern white cedar swamp ecosystem. This community also provides habitat for three rare plant species, including the Threatened small round-leaved orchis. The site also provides 258 acres Significant Wildlife Habitat for inland waterfowl and wading birds.

RARE AND EXEMPLARY NATURAL COMMUNITIES

The **circumneutral outcrop community** is comprised of sparsely vegetated rock outcrops, dominated by herbs and occurring below treeline. Here, the term “circumneutral” refers to soil pH between 5.5 (acidic) to 7.4 (alkaline). Plant species that indicate areas of higher pH conditions, such as shrubby cinquefoil and certain sedges and ferns, are typical in these areas. Sites are usually situated on side slopes and cliffs rather than ridges or hilltops, and are dry with occasional moist spots. These areas require a natural wooded buffer to ensure limited disturbance from recreation or forestry operations. Known locations occur in small, relatively inaccessible patches in the northwestern/north-central counties of Maine. In the Deboullie Unit, this community is found on the north- side of Deboullie Pond, north and east of the rock slide.

Cold-air talus slope communities occur at the bases of sheltered or north-facing talus slopes where cold air collects. Patchy mats of dwarf shrubs, such as Labrador tea, grow in the duff amongst the large rocks, and lichens are abundant as well. Scattered spruce may occur, though herbs are sparse. Ice may persist in crevices into the summer. Known locations of this community are on public or private conservation lands, in the northern and montane areas of the state. This community is found at the base of the cliffs on the south side of Deboullie Mountain, between the mountain and Deboullie Pond.

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 red 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. Most known examples

Ecological Services of the Focus Area

- Provides high quality habitat for waterfowl, wading birds, moose, and other wildlife.
- Supports regional biodiversity by providing habitat for rare plants, animals, and natural communities.
- As an important headwater source area, contributes to water quality and ecological integrity of the Allagash River and Fish River Lake.

Economic Contributions of the Focus Area

- Provides scenic vistas that contribute to Maine’s natural character.
- Attracts tourism for wildlife viewing, paddling, hunting, trapping, angling , skiing, and snowmobiling.
- Supports valuable brook trout , Arctic charr, and other cold water fisheries.
- Valuable recreational resource for local residents and visitors from around the world.

have been harvested in the past, 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. Two exemplary evergreen seepage forests are found in this focus area. One example stretches along a branch of Connors Brook that passes through the southwest corner of the state-owned land. The other example, along Rocky Brook, is a mature stand including large cedars up to 400 years old. This stand is partially within the Ecological Reserve and partly on private land.

Lower-elevation spruce-fir forests occur throughout Maine, typically on hill slopes with shallow or rocky, acidic soils. The dominant canopy tree is red spruce. Smaller amounts of fir and/or hemlock may be mixed with the spruce. The understory is mostly spruce and fir saplings and seedlings, with sparse groundcover of lowbush blueberry, Canada mayflower, starflower, bunchberry, and broom-mosses. This is the dominant spruce - fir type in Maine, and therefore extensively harvested and managed. Large (>1000 acres) examples free from human disturbance are scarce. This community type may be utilized as nesting habitat by a number of coniferous forest specialist bird species such as the sharp-shinned hawk, yellow-bellied flycatcher, bay-breasted warbler, Cape May warbler, blackpoll warbler, northern parula warbler, blackburnian warbler, boreal chickadee, Swainson’s thrush, red crossbill, and white-winged crossbill. This forest



Deboullie Ponds and Hills, Maine Natural Areas Program

type is found in the focus area between Black and Togue Ponds in several patches encompassing over 900 acres total.

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. In this focus area, an exemplary northern hardwoods forest community is found on the steep south facing slopes including along Rocky Brook. Another example, found between Whitman Mountain and Deboullie Pond, includes an unusual old stand of beech in the northern portion. This forest type includes valuable timber species and has been extensively harvested over the past two centuries.

This community provides nesting habitat for a large number of songbird species, such as the black-throated green warbler,

rose-breasted grosbeak, scarlet tanager, and ovenbird. A large proportion of the global population of blackthroated blue warblers nest in this community type in Maine.

Riverside seeps are communities that are constantly saturated by groundwater seepage, occurring along large rivers and occasionally lakes where there are naturally fluctuating water levels and occasional ice scour. They are found on coarse-textured soils, from steep gravel banks to lower shore flats with cobble. Ice scour maintains a semi-open shoreline, with a mixture of shrubs and herbaceous vegetation. Patches of riparian shrubs like willows and alders may be found alongside a variety of both native and introduced herbaceous plants, as well as mosses. Sedges and grasses, like the fen indicator grass-of-parnassus, may occur along with asters, Canada goldenrod, clovers, and cow-vetch.

This globally rare community is found in northern Maine, especially along the St. John River. Conservation of these sites involves maintaining an intact forest buffer to ensure the correct light conditions and flow of seepage waters, so clearing of the adjacent overstory has led to degradation of

some areas. Foot traffic poses typically poses no threat to this community, but the effects of off-road vehicles using the shoreline can be severe. An exemplary seep community is found along western edge of Gardner Pond.

CHARACTERISTIC RARE SPECIES

The **peregrine falcon** (*Falco peregrinus*) is a sleek, streamlined bird of prey said to be the fastest animal on earth. It nests on cliffs and feeds on other birds. Peregrines attack and kill their prey in flight, in high-speed dives that can reach 200 miles per hour. Although once broadly distributed in North America, this species was lost from much of its historic range, including the eastern United States, by the mid 1960s. Increased use of pesticides, especially DDT, after World War II was the primary cause of a drastic decline in peregrine populations worldwide.

In the 1980s, Maine joined other states in a large-scale peregrine falcon reintroduction program. Young, captive-reared birds were gradually released at former nest sites in Maine between 1984 and 1997, and successful breeding began in 1987. With recovery of the species nationwide, the peregrine falcon was taken off the federal endangered species list in 1999, but its breeding population remains listed as endangered in Maine, as its numbers here are still low. Current threats to this species include disturbance to nest sites and loss of habitat, including the wetlands and water bodies near nests where breeding falcons forage. Because the cliffs where peregrines nest are often near high-use recreational areas, careful management is necessary to avoid conflicts during the breeding season. Peregrines historically nested on Deboullie Mountain, though there have been no nests there in recent years.

Arctic charr (also known as blueback trout or blueback charr) is a cold water fish in the salmon family, closely related to brook trout and lake trout. It is found throughout the northern polar regions of the world. Both anadromous (sea-run) and freshwater resident ("land locked") populations of this fish occur in North America. Arctic charr (*Salvelinus alpinus*) populations in Maine are found in deep, cold, well-oxygenated lakes. These populations are genetically distinct from Arctic charr found in other parts of North America. In Maine, the Arctic charr is a relatively small, slow-growing fish that eats mostly plankton and rarely reaches 16 inches in length. Major threats to this species include competition and predation from introduced and stocked species and habitat degradation from the cumulative impacts of activities such as silviculture, road building, and shoreline development. Hybridization with lake trout has led to the loss of distinct Arctic charr populations from water bodies in New Hampshire and Vermont. Landlocked Arctic charr are found in 14 lakes in Maine, including Deboullie, Black, Gardner, and Pushineer Ponds within this focus area.

The **Eastern brook trout** (*Salvelinus fontinalis*) once inhabited nearly every cold water stream in the eastern United States. Wild stream populations of brook trout have disappeared from about half of the watersheds where they once occurred in this region. Though Maine's brook trout populations are greatly reduced from historic levels, they are among the healthiest populations remaining in the eastern U. S. Maine is the only state with extensive intact populations of wild, self-reproducing brook trout in lakes and ponds. In addition, much of the state's stream habitat supports brook trout, the vast majority of which are wild (self-sustaining) populations. Threats to Maine's wild brook trout include habitat loss and degradation and competition from introduced fish species. Like other cold water fish, brook trout can benefit from simple conservation measures like maintaining forested buffers along water bodies and wetlands and improving road-stream crossings.

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 species, mountain fly-honeysuckle, grows in similar habitats but has blue berries. Swamp-fly honeysuckle is found along the banks of Mud Pond in this focus area.

The **fragrant cliff wood-fern** (*Dryopteris fragrans*) is a small, aromatic, evergreen fern found on cool, shaded rocky outcrops and dry cliffs, often in crevices. It is a species of Special Concern in Maine, where it is at the southern limit of its range. A distinguishing feature of this fern is the presence of persistent, dead fronds at the base of each plant. The leathery fronds are tapered at the base, with densely crowded leaflets and whitish-brown sori, or spore-bearing bodies. Its known populations in Maine are in remote areas, yet have been documented as far back as 1885. The smell of the fronds, when handled, resembles a violet or raspberry scent. A small population of the fragrant cliff wood-fern is found on the shore of Black Pond.

CONSERVATION CONSIDERATIONS

» 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. Where late successional and old growth stands remain, these should be conserved when possible. Additional areas should also be set aside from timber harvests to allow for the development of some unman-

aged forests.

- » Recreational use of this focus area should be managed to prevent potential negative impacts on important resources and recreational values. Education of users can help to limit any damage from recreational activities, especially in sensitive areas such as lake and pond shores and rare plant sites. Both motorized and non-motorized users should be encouraged to minimize off-trail use and practice minimum impact camping. Proper trail construction and monitoring is also important. ATV use should be excluded from the summits and upper slopes of the mountains, as well as from wetlands.
- » Managers and visitors should strive to minimize impacts to habitats that may potentially harbor northern bog lemmings and associated species (cool, moist, mossy areas of a boreal or alpine character). Before any development activities or forest harvesting in or near known lemming habitat, managers should consult with a biologist from MDIFW to assist with planning.
- » Forested areas surrounding the lakes, ponds, streams, and wetlands are vital to the ecological health of the water bodies and wetlands within the focus area. These buffers also provide valuable riparian habitat for many wildlife species. Maintaining the structure and function of these natural communities is a primary conservation goal.
- » The introduction of new fish species or other aquatic organisms can be devastating to aquatic ecosystems that support wild brook trout, Arctic charr and other native fish populations. Fisheries managers will take this concern under consideration in the management of this focus area. Education of recreational users can help prevent deliberate or accidental introduction of new species. The unauthorized introduction of any fish to any waterbody in Maine is a serious crime. Anglers can help protect the wild brook trout and other native fish that make up an important part of Maine's natural heritage through knowledge and compliance with State of Maine regulations governing the possession and use of live bait fish.
- » 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.
- » 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.

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Northern Bog Lemming	<i>Synaptomys borealis sphagnicola</i>	T	S1	G4T3Q
	Peregrine Falcon	<i>Falco peregrinus</i>	E	S1S2N,S2B	G4
	Arctic Charr	<i>Salvelinus alpinus</i>	SC		
Plants	Alpine Rush	<i>Juncus alpinoarticulatus ssp. nodulosus</i>	SC	S3	G5T5?
	Arctic Sandwort	<i>Minuartia rubella</i>	E	S1	G5
	Few-flowered Spikerush	<i>Eleocharis quinqueflora</i>	SC	S2	G5
	Fragrant Cliff Wood-fern	<i>Dryopteris fragrans</i>	SC	S3	G5
	Lesser Wintergreen	<i>Pyrola minor</i>	SC	S2	G5
	Northern Slender Pondweed	<i>Stuckenia filiformis ssp. alpinus</i>	SC	S2	G5T5
	Northern Woodsia	<i>Woodsia alpina</i>	T	S1	G4
	Showy Lady's-slipper	<i>Cypripedium reginae</i>	T	S3	G4
	Small Round-leaved Orchis	<i>Amerorchis rotundifolia</i>	T	S2	G5
	Smooth Woodsia	<i>Woodsia glabella</i>	T	S1	G5
	Swamp Fly-honeysuckle	<i>Lonicera oblongifolia</i>	SC	S3	G4
	Natural Communities	Acidic Cliff	Acidic cliff - gorge		S4
Circumneutral Outcrop		Boreal circumneutral open outcrop		S2	GNR
Cold-air Talus Slope		Labrador tea talus dwarf-shrubland		S2	G3G5
Evergreen Seepage Forest		Cedar - spruce seepage forest		S4	GNR
Lower-elevation Spruce - Fir Forest		Spruce - fir - broom-moss forest		S4	GNR
Northern Hardwoods Forest		Beech - birch - maple forest		S4	G3G5
Northern White Cedar Swamp		Northern white cedar swamp		S4	GNR
Riverside Seep		Circumneutral riverside seep		S2	G2
Spruce Rocky Woodland		Spruce talus woodland		S4	G3G5

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.