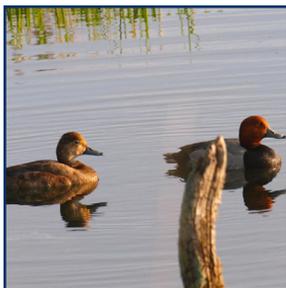


Tunk Lake



WHY IS THIS AREA SIGNIFICANT?

The mountains and largely undeveloped lakes of the Tunk Lake Focus Area constitute one of the most distinctive landmarks and natural areas of Downeast Maine. The diverse landscape here supports a wide variety of different natural community types and rare plant species, as well as two rare animal species. The large areas of protected land within the focus area are also a popular recreation destination.

OPPORTUNITIES FOR CONSERVATION

- » Encourage best management practices for forestry, vegetation clearing, and soil disturbance activities near significant features.
- » Encourage landowners to maintain enhanced riparian buffers.
- » Educate recreational users about the ecological and economic benefits provided by the focus area.
- » If recreational use is impacting natural features, work to enforce legal restrictions on motorized use in fragile areas.
- » Protect sensitive natural features through careful management planning on conserved lands.

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

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Rare Animals

Tule Bluet

Rare Plants

Mountain-laurel
Smooth Sandwort

Rare and Exemplary Natural Communities

Birch - Oak Rocky Woodland
Grassy Shrub Marsh
Hemlock Forest
Low-elevation Bald
Lower-elevation Spruce - Fir Forest
Oak - Northern Hardwoods Forest
Oak - Pine Woodland
Raised Level Bog Ecosystem
Red Pine Woodland
Unpatterned Fen Ecosystem

Significant Wildlife Habitats

Inland Wading Bird and Waterfowl Habitat
Deer Wintering Area

Public Access Opportunities

- Donnell Pond, MPBL
- Tunk Lake, MBPL
- Schoodic Bog, MBPL



Eastward view of Tunk Lake from the summit of Black Mountain, Maine Natural Areas Program

FOCUS AREA OVERVIEW

The mountains and lakes formed by the Tunk Mountain pluton (a broad intrusion of igneous rock) constitute one of the most distinctive landmarks and natural areas in Downeast Maine. This focus area includes the picturesque mid-elevation (~1,000 foot) summits of Schoodic Mountain, Tunk Mountain, Black Mountain, Caribou Mountain, and Catherine Mountain, as well as numerous undeveloped or sparsely developed lakes and ponds, including Tunk Lake, Spring River Lake, and Donnell Pond.

The bedrock and surficial geology of the area create a variety of ecological zones that follow gradients of slope, aspect, and moisture and have been modified to varying extents by past land use and fire.

From upper to lower elevations, these mountains include Heath-Krummholz summits and Low-Elevation Summit Balds, intact Spruce-Fir-Broom-Moss Forests on steep slopes, drier Oak-Pine forests on south facing slopes, post-burn early successional hardwood forests, and forests regenerating from past harvest. In general, forests at mid and higher elevations show greater evidence of past fire, whereas lower elevation stands have a less apparent fire history but more obvious evidence of recent harvesting. The effects of fire varied with fire intensity – in most areas medium intensity fires appeared to limit

shrub and sapling development but did not kill the forest canopy. Other areas, such as the southeastern side of Caribou Mountain, apparently burned at a higher intensity, resulting in an early successional stand dominated by paper birch (*Betula papyrifera*), grey birch (*Betula populifolia*), and red maple (*Acer rubrum*).

Among the more noteworthy ecological features of this area is a small stand of old growth red spruce (*Picea rubens*) around Wizard Pond in a saddle near the summit of Black Mountain. This stand, which has been inaccessible because of surrounding steep terrain, has little to no evidence of human disturbance and numerous trees over 250 years old.

Sizable Low Elevation Summit Balds occur on Schoodic Mountain, Round Mountain, and Black Mountain. The balds were likely created (or at least enhanced) by repeated fire, and they are recreational destinations because they offer stunning views. Two of these locations support the rare smooth sandwort, a plant restricted to acidic outcrops.

The focus area also includes two large peatlands – the 400+ acre Downing Bog and the 135 acre Schoodic Bog. Downing Bog is of sufficient size and diversity to qualify as an Unpatterned Fen Ecosystem of statewide significance.

The focus area also includes undeveloped lands north of the state land in T10 SD and T16 MD and south of the West Branch of the Narraguagus River. Much of this area has been recently harvested, but a description of Tucker Branch Mountain in T10 SD from 1998 describes the general oak and pine-dominated forest types of this area. The lower slopes of this mountain support early to mid-successional oak-pine forest that extends to mid-slope. Red oak (*Quercus rubra*) and eastern white pine (*Pinus strobus*) are co-dominants in the tree canopy and red maple (*Acer rubrum*) is present in the sapling layer. The north side of the summit contains a small red pine/eastern white pine woodland with little soil development. Huckleberry (*Gaylusscia baccata*) and eastern white pine dominate the shrub layer. Notable herbaceous species include poverty oatgrass (*Danthonia spicata*), panic grass (*Panicum sp.*) and the sedge *Carex tonsa*. Charred stumps indicated prior fire activity.

The beaches of Donnell Pond are a popular recreational asset, and many of the ponds and lakes in the focus area, including Little Tunk Pond, Rainbow Pond, Rainbow Brook, Spring Brook, support noteworthy brook trout fisheries while the outlet of Tunk Lake hosts high value landlocked salmon habitat.

In total there is more than 17,000 acres of protected land, most of which is open for public access, within this focus area.

RARE AND EXEMPLARY NATURAL COMMUNITIES

Raised Level Bog Ecosystem: Flat peatlands in basins with mostly closed drainage, receiving water from precipitation and runoff from the immediate surroundings. Most parts of level bogs are somewhat raised (though not domed), in which case vegetation is almost entirely ombrotrophic (dwarf shrub heath or forested bog). Other parts of the bog are not raised; in this case, vegetation is transitional (in nutrient status) between that of ombrotrophic bogs and minerotrophic fens. In all cases, *Sphagnum* dominates the ground surface and is the main peat constituent. The surface of the bog is flat and featureless. These bogs are often at least partly treed with black spruce and larch.

Low-elevation Bald: Consists of patches of blueberry, lichens, low herbs, and bare rock form a mosaic on these summits. Vegetation may be sparse, but usually forms 10-50% cover overall, often comprised of only a few species. Three-toothed cinquefoil may be locally abundant. A few coastal sites feature broom-crowberry, an uncommon species. Bryoid cover may be low or high and usually is dominated by lichens rather than bryophytes. This is the typical habitat of the rare smooth sandwort.

This type is well represented on public lands and private conservation lands. However, because this community type is usually associated with nice views, many sites have moderate to heavy hiker or ATV use. Because the vegetation is rather sparse, it is easy for visitors to wander off the trail, and off-trail traffic can seriously degrade the vegetation and has done so at several sites.

Ecological Services of the Focus Area

- Provides high quality habitat for waterfowl, wading birds, deer and other wildlife.
- Protects water quality in local ponds and streams.
- Provides nursery habitat for fish and other aquatic animals.
- Supports regional biodiversity by providing habitat for rare plants, animals, and communities.

Economic Contributions of the Focus Area

- Valuable recreational resource for local residents.
- Attracts tourism to the downeast area for hiking, skiing, camping, wildlife observation, paddling, hunting, angling, and snowmobiling.
- Provides research opportunities.
- Provides wildlife habitat for a number of fish and game species that are seasonally important to Maine's rural economy.



Summit Black Mountain, Maine Natural Areas Program

Lower-elevation Spruce - Fir Forest: These closed canopy (>75% closure) forests are dominated by red spruce (>60% cover), typically with few other tree species in any of the layers. Fir is often a minor canopy component (up to 20% cover), particularly in open gaps or in younger stands. Hemlock is occasionally mixed with the spruce in southern or central Maine. The lower layers are sparse or patchy, consisting mostly of tree regeneration. In the sparse herb layer, dwarf shrubs are virtually absent except for spotty lowbush blueberry; herbaceous species cover well under 10% of the ground surface, and usually consist of scattered plants of Canada mayflower, starflower, and bunchberry. Most of the ground surface is bare conifer litter, although at some sites (particularly Downeast Maine), bryophytes may form patchy to full cover. Broom-mosses are the most frequent and abundant bryoids.

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,



Tunk Lake from Black Mountain, Craig Snapp

blackburnian warbler, boreal chickadee, Swainson's thrush, red crossbill, and white-winged crossbill.

CHARACTERISTIC SPECIES

Tule bluet (*Enallagma carunculatum*), a species of special concern in Maine, is known to occur at Tunk Lake. Tule bluets range widely across Canada and the northern and western United States. They are most common, however, in the western portion of their range. In Maine, this damselfly species is only known at 4-5 ponds. Tule bluets inhabit a variety of wetland types, but seem to prefer large lakes. Nymphs are aquatic and live among aquatic vegetation and debris while adult tule bluets inhabit emergent vegetation along the shore and in nearby uplands.

High and moderate value **Inland Wading Bird and Waterfowl Habitat** has also been mapped primarily along the streams, bogs and wetlands that drain into the focus area's larger lakes and ponds. These areas provide undisturbed nesting habitat and feeding areas and are essential for maintaining viable waterfowl and wading bird populations.

Tunk Lake, Spring River Lake and Tunk Stream all provide habitat for sea-run salmon, alewives and sea-run brook trout.

CONSERVATION CONSIDERATIONS

- » The southwest side of this area (south of Route 182) coincides with a large "roadless block" that is the second largest such block in the Eastern Coastal region. Fragmentation, from road construction and development, of this area should be avoided.
- » Most of the areas of highest ecological significance are within public ownership. The Maine Bureau of Parks and Lands is currently (December 2003) updating its management plan of the area. The Nature Conservancy owns significant acreage here. Maine Coast Heritage Trust and Frenchman's Bay Conservancy have been working to protect additional key parcels. And MDIFW holds conservation easements on close to 1,500 acres of private land within the complex of other public and private conservation lands. Public access is guaranteed to most of these properties.

- » Inappropriate use of all-terrain vehicles (ATVs) has led to the disturbance of some sensitive habitats, such as the summits of Schoodic Mountain and Round Mountain, as well as access to some of the remote ponds. The state's management planning process is currently evaluating ways to direct appropriate ATV usage.
- » More research is needed to determine the natural fire frequency in the region.
- » Recent ill-advised introductions of non-native small-mouth bass into Donnell Pond, Long Pond, and Round Pond have led to the reduction or elimination of native fisheries, including landlocked salmon and brook trout. Moving and releasing live fish, even bait fish, into a water body is against the law. It is destructive to the ecosystems present, destroying native fisheries, and it is expensive if not impossible to restore.
- » The integrity of wetlands and aquatic systems including all the processes and life forms they support are dependent on the maintenance of the current hydrology and water quality of these systems. 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. Future management activity should avoid additional impacts to the site's hydrology. 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.
- » Management of tule bluet habitat should focus on maintaining water quality, protecting wetlands and adjoining upland buffers, controlling road run off, limiting applications of herbicides and insecticides and maintaining sufficient water levels.
- » The Tunk Lake Focus Area includes the Black Mountain Ecological Reserve. 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	Tule Bluet	<i>Enallagma carunculatum</i>	SC	S1	G5
Plants	Mountain-laurel	<i>Kalmia latifolia</i>	SC	S2	G5
	Smooth Sandwort	<i>Minuartia glabra</i>	SC	S3	G4
Natural Communities	Birch - Oak Rocky Woodland	<i>Birch - oak talus woodland</i>		S3	G3G5
	Grassy Shrub Marsh	<i>Mixed graminoid - shrub marsh</i>		S5	GNR
	Hemlock Forest	<i>Hemlock forest</i>		S4	G4G5
	Low-elevation Bald	<i>Three-toothed cinquefoil - blueberry low summit bald</i>		S3	GNR
	Lower-elevation Spruce - Fir Forest	<i>Spruce - fir - broom-moss forest</i>		S4	GNR
	Oak - Northern Hardwoods Forest	<i>Red oak - northern hardwoods - white pine forest</i>		S4	GNR
	Oak - Pine Woodland	<i>Oak - pine woodland</i>		S4	G3G5
	Raised Level Bog Ecosystem	<i>Raised level bog ecosystem</i>		S4	GNR
	Red Pine Woodland	<i>Red pine woodland</i>		S3	G3G5
	Unpatterned Fen Ecosystem	<i>Unpatterned fen ecosystem</i>		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.