

IV. Resources, Issues/Opportunities and Management Recommendations for Lands in the Central Penobscot Region

General Management Focus

The Bureau’s overall management focus for the Central Penobscot Region is built upon the following management principles and objectives: 1) practice sound, multiple use planning; 2) utilize exemplary, state of the art resource management practices that protect resources from over-use, avoid conflicting use, control exotic species, and continually add value to the resource base and visitor’s “back woods” experiences; 3) offer new recreation and educational opportunities where appropriate and compatible with the emphasis on more remote, dispersed, less developed activities, with or without vehicle access, 4) honor traditional uses wherever appropriate, and avoid restrictions on free and reasonable public access, 5) remain adaptable to changing environmental and cultural conditions through far-sighted planning, and cooperation and connectivity with adjoining landowners, and 6) conduct timber harvesting where appropriate in a manner that maintains or improves forest health and diversity, protects special natural features and visitor safety, enhances wildlife habitat, preserves the visual integrity of the landscape and produces a sustainable stream of high quality (over the long term) timber products; all within the Bureau’s legislative and regulatory mandates and budgetary and staffing constraints.

Nahmakanta Unit

Character of the Land Base

The Nahmakanta Public Lands Unit is located in the midst of a large swath of contiguous conservation land of over 600,000 acres in the celebrated “100 Mile Wilderness” area. Comprised of 43,966 acres, Nahmakanta is the largest of the state’s Public Reserved Lands Units, and contains the State’s largest ecological reserve (11,082 acres). Together with adjacent lands around Rainbow Lake owned by The Nature Conservancy (TNC), the Nahmakanta Ecological Reserve composes approximately 55,000 acres of contiguous, virtually unroaded mature forest between Nahmakanta Lake and the Golden Road.

There are 56 lakes and ponds over 1/4 acre in size within the Unit, with a combined frontage of 45 miles and nearly 2,500 surface acres. The 24 great ponds (10 or more acres in size) that lie within the Nahmakanta Public Lands Unit’s boundaries encompass more than 50 miles of undeveloped shoreline. The scenic Nahmakanta Lake is one of the great ponds in the Unit providing outstanding fisheries. Nahmakanta Lake is a 3.5 mile long, largely undeveloped lake nestled between the Appalachian Trail and the Nahmakanta Ecological Reserve. Nearby to the southeast, Fourth Debsconeag Lake

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abuts both state lands and TNC’s Debsconeag Lakes Wilderness Area. Fifth through Eighth Debsconeag Lakes are entirely within the Nahmakanta Ecological Reserve.



View of Nahmakanta Lake from the Appalachian Trail on Nesuntabunt Mountain.



Wadleigh Mountain as seen from Pollywog Pond.



Nahmakanta Stream below Nahmakanta Lake outlet.

The Nahmakanta Public Reserved Lands Unit also harbors a number of rare plants and animals, exemplary natural communities and significant wildlife habitats.

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The Appalachian National Scenic Trail runs through the Nahmakanta Unit, and many shorter trails to peaks and scenic ponds give hikers and backpackers a variety of options to explore. Camping in a remote environment is one of Nahmakanta's hallmarks, with drive-to, hike-to and water access campsites available. Snowmobilers pass through on the busy Interconnected Trail System (ITS) 85/86, but also have several options of more remote groomed club trails, and even un-groomed trails for a more backcountry experience. ATV riders can access the Unit from the Kokadjo trail network, and once on the Unit, ride both the shared use road system and a new ATV trail to a lean-to on top of a scenic nubble on Farrar Mountain.

Acquisition History

The Nahmakanta Public Lands Unit began as original public lots of 1,000 acres each in three townships: T1 R12 WELS, Rainbow Township, and T1 R11 WELS. These lots, each originally designated for support of a minister, a church and a schoolhouse in anticipation of each township incorporating, were located on the ground in 1843, 1842 and 1847, respectively. As with many unincorporated townships in Maine, they never became organized towns, and in 1975 the State began to consolidate holdings into the Nahmakanta Unit, in a series of transactions with Great Northern Nekoosa and Diamond Occidental Forest. Some of these transactions involved trading away portions of the original public lots for new lands, and others involved outright purchase of new lands.

It is worth noting that in 1990 the State acquired 30,829 acres in Rainbow Township and all of T1 R11 WELS from Diamond Occidental Forest, Inc. with funds from the Land for Maine's Future (LMF) Program. Diamond donated money toward stewardship of the lands acquired in this transaction including the Nahmakanta lands. The National Park Service (NPS) purchased 1,820 acres from Diamond Occidental which became part of the A.T. Corridor. The A.T. Corridor transects the Bureau's ownership in Rainbow Township and T1 R11 WELS and is entirely in NPS ownership in the Nahmakanta area. The majority of T1 R12 WELS was acquired from Great Northern Nekoosa in 1984.

Camplot Leases

There are five residential camplot leases and one commercial leased lot (Debsconeag Lake Wilderness Camps) on the Nahmakanta Unit that were in place at the time of State purchase, and are retained pursuant to Bureau policy (the Bureau honors existing camplot leases but does not develop new ones). The camplots are on Black, Female, Wadleigh, Penobscot, and Leavitt Ponds. Nahmakanta Lake Camps is a commercial sporting camp located on NPS lands inside the Unit.

Natural Resources

The Maine Natural Areas Program (MNAP) completed a natural resources inventory of the Nahmakanta Unit for this Plan. The inventory is based on prior studies and reports, including information in the 1995 Plan and Ecological Reserve Inventory surveys from 1992 and 1995, and additional field work conducted by MNAP staff in 2010 and 2011 to revisit selected sites. Much of the following information was excerpted from this inventory (Cutko and Schlawin 2012).

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Topography

The topography is diverse on Nahmakanta Public Lands, containing a combination of low mountains, moderately to strongly sloping hillsides, and occasional moist flats and steep ravines. Farrar and Wadleigh Mountains, and Turtle Ridge are the Unit's highest points. Elevation gradually decreases from west to east and ranges from 2,524 feet above sea level at the top of Farrar Mountain, the highest peak in the Unit, to 590 feet where Nahmakanta Stream crosses into T1 R10 WELS. The average elevation on the Unit is 1,300 feet.

Geology and Soils

Many of Nahmakanta's noteworthy ecological features can be attributed to its geologic history and exposed granitic bedrock. The rugged mountains of Farrar and Wadleigh resulted from geologic uplift and metamorphism, and talus slopes east of Turtle Ridge formed when freshly carved vertical cliff faces were exposed to weathering over thousands of years. Other areas of exposed bedrock east of Nahmakanta Lake occur on gentler slopes but still remain sparsely vegetated because of past fires.

The Katahdin pluton, a large body of igneous rock (derived from molten magma) intruded into the earth's crust, comprises the bedrock underlying the eastern side of the public lands. This large body of granitic rock extends northeastward to Baxter Peak and many of the surrounding mountains. Portions of this granitic pluton on the Nahmakanta Unit are exposed at the surface as a result of the erosion of surficial materials. Its mineral composition contributes to the formation of acidic soils that are comparatively low in productivity. The relative resistance of this formation to weathering is the reason for the rugged terrain. Ledge outcrops are common, and there are many cliffs, talus slopes, granite slides and bald summits.

On the western side of the Nahmakanta Unit the bedrock geology is more complex—composed of a greater variety of mostly sedimentary rock types. In the southern end, sedimentary slate with layers of sandstone provides a more diverse mixture of rock types than the granite of the eastern side of the Unit. The weathering of these diverse rock types results in better quality, finer textured soils with greater nutrients. As a result, soils often favor northern hardwoods rather than spruce-fir. In the northern end, metamorphosed sedimentary rocks are found near Black and Female Ponds, and the Ripogenus pluton composed of gabbros borders the west shores of Pollywog and Wadleigh Ponds resulting in soils high in clay content.

After glaciers retreated 13,000 to 14,000 years ago, they left a blanket of ice-transported boulders and sediments across the landscape. The east side of the unit is covered by a thin layer of till (generally less than 10 feet thick), while the layer of till is thicker in the west side. Tills are composed of an unsorted mass of rocks, sand, silt and clay. However, there are some stratified features within the unit including eskers and some ribbed moraine deposits. Eskers are linear deposits of sand and gravel that were deposited by sub-glacial streams. Ribbed moraines are poorly understood sub-glacial formations that are defined by small ridges of glacial deposits—usually till, but

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sometimes sand and gravel. Ribbed moraine deposits are found around the Turtle Ridge area and around Nahmakanta Lake.



Tumbledown Dick Falls.



Granite ledges on Turtle Ridge seen from west loop of Turtle Ridge Trail.

Hydrology

The Nahmakanta Public Lands Unit lies within the Penobscot River drainage, and all of the streams on the Unit are tributaries of the West Branch of the Penobscot River. There are four separate drainage systems:

- Black Pond and Black Brook flow northward into Caribou Lake;
- Rabbit and Leavitt Ponds drain southeastward into Mud Pond via Pratt Brook;
- the Debsconeag Lakes drain eastward into the Debsconeag Deadwater on the West Branch of the Penobscot River; and
- Rainbow Stream drains southward, and Penobscot Pond, Sing Sing Pond, the Musquashes, Wadleigh Pond, Female Pond and Pollywog Pond drain north and then eastward through Pollywog Stream into the 1,000-acre Nahmakanta Lake, the water of which exit the Unit through eastward-flowing Nahmakanta Stream.

Most of the streams flow swiftly through deep, narrow, boulder strewn channels, with many riffles, pools, and scenic waterfalls. Brooks are fed by numerous dispersed mountain seeps, and there are many unmapped headwater streams. Pollywog and Tumbledown Dick Streams have cut deep gorges through the granite bedrock.

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Water Quality

In a statewide assessment, Nahmakanta Lake was identified as ‘class 1A’ lake (the highest ranking) for possessing multiple resources of statewide significance, and Fourth Debsconeag Lake, Penobscot Pond, and Wadleigh Pond were ranked as ‘class 1B’. Monitoring data for Nahmakanta Lake, collected since 1974, indicates that the lake’s water quality is above average, based on measures of water transparency, total phosphorus, and chlorophyll-a. The potential for nuisance alga blooms on Nahmakanta Lake is low. Recent dissolved oxygen (DO) profiles show low DO depletion near the bottom of the 110’ deep lake. Water quality data also exists for Fifth and Sixth Debsconeag Lakes but not for the other lakes within the Unit.¹

Wetlands

The rugged topography of the Nahmakanta Unit does not lend itself to wetland formation. Only five percent of the Unit’s area—2,152 acres—is wetland, mostly concentrated along streams and basins where beavers are active. The largest wetlands are forested swamps and open streamshores along Farrar Brook and wetlands associated with Second Musquash Pond. Most are open wetlands, including beaver origin Mixed-Graminoid Shrub marsh, Sweetgale-Mixed Shrub Fen, Alder Thicket and Sedge-Leatherleaf Fen Lawn communities, among others. Forested wetlands are very sparse and include Cedar-Spruce Seepage Forest and Northern White Cedar Swamp.

Ecological Processes

Based on historical records, the Nahmakanta Unit and the surrounding region were dominated by stands of large, old spruce in pre-settlement times (Lortie et al. 1992). Historically, hardwood stands occurred primarily in small pockets. Today, as a result of forest disturbances during the early 1900s including logging, insect outbreaks, and fire, mid-successional hardwood and mixed-wood stands are dominant and only scattered small patches of forest retain an “old-growth” character. Lands were managed primarily for forest products prior to state acquisition, with softwood stands presumably harvested more heavily than hardwood stands, in light of the historically higher demand for softwood lumber and pulp.

Logging of softwood forests, abnormally dry weather, and spruce budworm epidemics between 1913 and 1922 made the region especially vulnerable to fire. A series of intense fires between 1903 and 1924 burned thousands of acres, including much of the east side of T1 R11 WELS and Rainbow Township, scorching the landscape and scouring soils. These fires have resulted in over mature even-aged stands of aspen, birch, and red maple (70 - 100+ years), red pine stands on drier ledges east of Nahmakanta Lake, and even-aged spruce stands on rockier, or poorly drained soils (Jay Hall, personal communication).

Early spruce budworm epidemics were historically devastating, with 45 percent spruce mortality and 93 percent fir mortality by 1922 (Penobscot Development Company, 1922). Following the most recent spruce-budworm epidemic in the 1980s, there was moderate to heavy salvage harvesting of softwood stands within the Nahmakanta Public Lands.

¹ Source: <http://www.maine-lakedata.org>.

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Spruce budworm disturbance was greatest along the higher ridges of Wadleigh, Farrar, and Female Mountains, where wind and weather effects caused trees to be more stressed and created frequent gaps and a patchy canopy. Today, spruce and fir are regenerating in mid-successional mixed forests and in pure softwood stands on the higher ridges, steep northerly slopes, and in stream valleys. Mixed conifer woodlands have become established on pockets of poor soil and bedrock on granite balds swept bare by fire.

The forested communities on the unit also show evidence of typical small gap disturbances from ice, wind, and natural tree mortality. At higher elevations larger patches (a few acres) of blowdowns occur in the spruce-fir forests. Trees on steep slopes and exposed ridges are especially susceptible to this type of disturbance. These gaps increase the complexity of forest structure and add to the diversity of microhabitats in the forest for plants and animals.

In general, after years of recovery from the historical influences of fire, budworm, and harvesting, most of the forests are now mature (e.g., moderately to well stocked with trees more than 50 years old), and relatively little of the forested acreage is early successional.

Rare Plant and Animal Species

On Maine's *Threatened and Endangered Plant* list, Pygmy water lily (*Nymphaea tetragona*) is listed as a *Threatened Species*, and fragrant fern (*Dryopteris fragrans*) is listed as a "Special Concern" species. Pygmy water lily was found at Little Penobscot, First and Second Musquash, and Wadleigh Ponds, all of which are part of the same watershed. Second Musquash Pond contained the largest number of individual plants, between 75 and 100 growing as a discrete population in an emergent marsh community. Pygmy water lily is like other water lilies only smaller, approximately three inches in diameter, with a deep, v-notch in the leaf.

Fragrant fern was found in several locations in Pollywog Gorge (within the A.T. corridor) and Tumbledown Dick Stream Gorge, and at one location near Eighth Debsconeag Pond. Fragrant fern looks like other ferns but is smaller and distinguished by its growth habit. It is found growing in robust clumps, usually about 8-12 inches wide, from the sides of cliffs. Fragrant fern gets its name from the sweet, fruity scent released when the leaves are rubbed together.

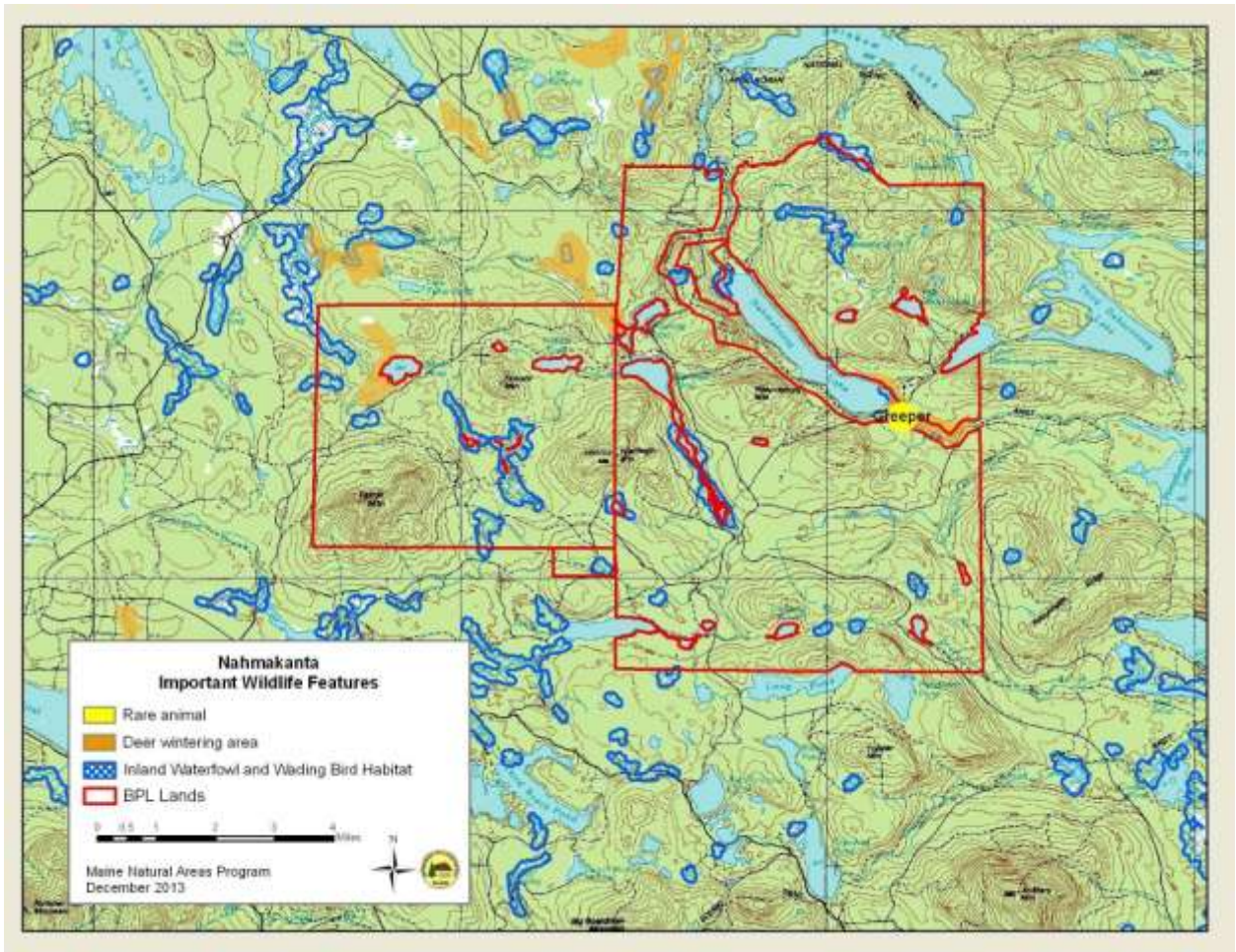
Luminous moss (*Schistostega pennata*) is a rare moss named because it reflects light like a cat's eye. The State Endangered Plant List does not include mosses, but this species is believed to be rare based on current and historic collections. It typically occurs in rock crevices near water, and was found in Pollywog Gorge (within the A.T. corridor) in a small horizontal crack on two large granitic slabs, and in a similar habitat adjacent to Eighth Debsconeag Pond.

Pygmy water lily, fragrant fern and luminous moss are at relatively low risk of impacts because they are living in inaccessible locations (on steep rocks or in wetlands), providing a natural riparian buffer from many potential disturbances. Wadleigh Pond,

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where the Pygmy water lily lives, has an undeveloped hand-carry boat access site suitable for launching small boats.

The creeper (*Strophitus undulatus*), a rare freshwater mussel, is found in Nahmakanta Stream, below Nahmakanta Lake where the animal prefers cool, moving freshwater. Sound riparian management, involving an intact forested buffer, is appropriate to maintain cool, clean, well oxygenated water in locations where the creeper occurs.



Natural Communities

The **Spruce - Fir - Northern Hardwoods Ecosystem** type is a broad scale classification that describes nearly all of the forest in the Nahmakanta Unit. This ecosystem type is comprised of numerous upland hardwood and softwood natural communities that are typical to northern Maine and the central mountains. Spruce typically occupies about 20-30 percent of the ecosystem, with sugar maple, red maple, beech, yellow birch and scattered white ash and northern white cedar sharing dominance.

There is an outstanding forested ecosystem located along the western shore of Nahmakanta Lake (east of Nesuntabunt Mountain between the north and south peaks), primarily within the Appalachian Trail corridor, with only a small portion located in the

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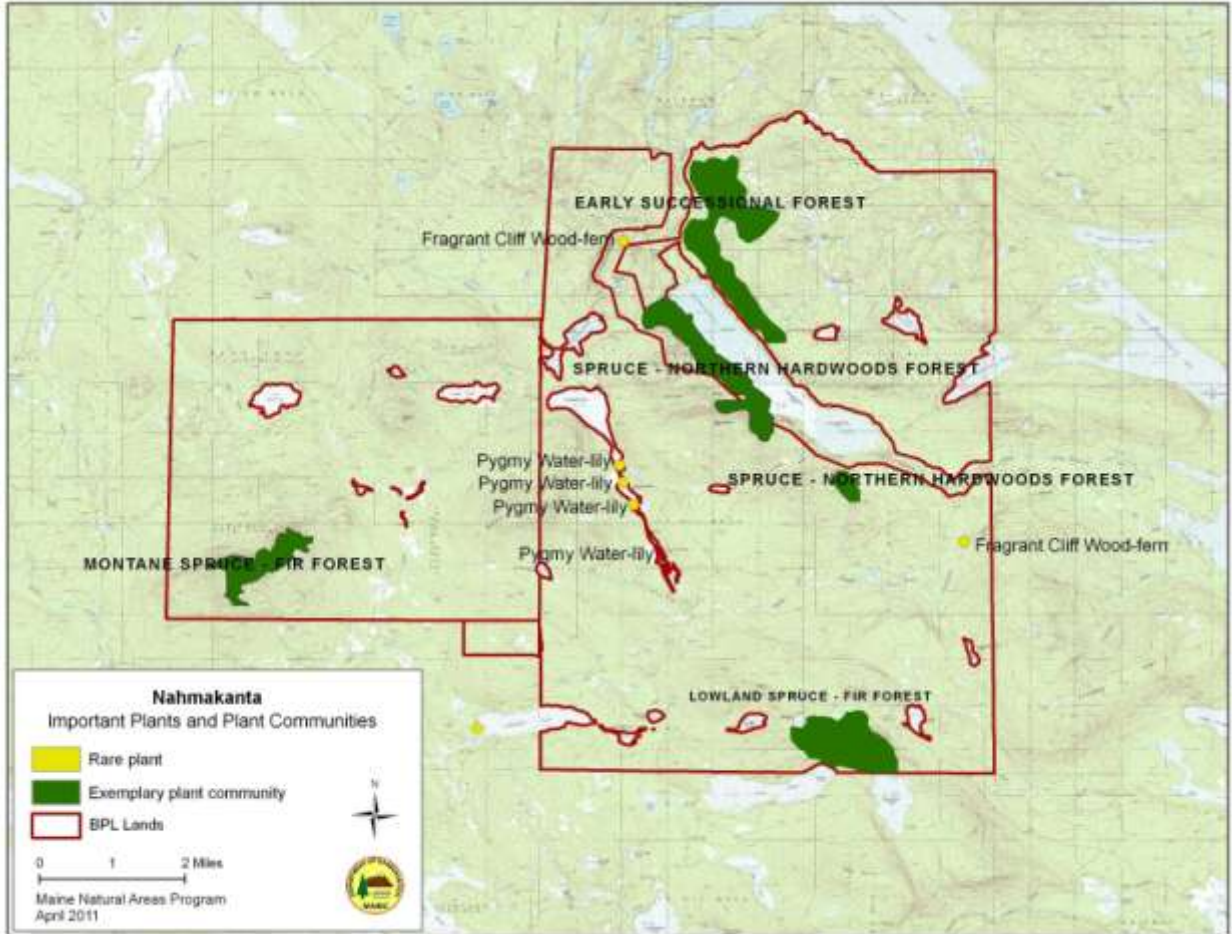
Unit. The rugged 500+ acre area shows little or no evidence of past harvesting except for in some flat areas. It includes components of Sugar Maple Forest, White Pine-Mixed Conifer Forest, Montane Spruce-Fir Forest, and Spruce-Fir Northern Hardwoods Forest. Spruce trees that were cored were found to be 110, 175, and 195 years old.

Aspen – Birch Woodland/Forest Complex is common throughout Maine, especially following fire or even-aged timber harvesting operations in central and eastern Maine. A large example of this type is found north of Nahmakanta Lake (within the Ecological Reserve) where approximately 950 acres of burn origin forest and woodland occur. Although some harvesting may have occurred in this area in the past, virtually all evidence has been erased by fire. Paper birch is the dominant tree species, with the largest individuals growing to 60 feet tall, with a diameter of 10 inches and ranging from 45 to 55 years old. Other common tree species in the overstory include white pine, red maple and big-tooth aspen. Common and characteristic understory species in this fire-origin forest include lowbush blueberry, bracken fern, shadbush and striped maple. Dominant trees in the seedling/sapling age class will make for a successional change to a mixed forest within the next several decades. These prevailing species include balsam fir, red maple, white pine, red spruce, and northern white cedar.

A large and mature example of the **Lowland Spruce – Fir Forest** type, which occurs on cool, bouldery slopes at lower elevations, is located northeast of Long Pond and south of Rabbit Pond, in the southeast corner of the Unit. Many spruce trees that were cored are about 95 years old. The 95 year time frame coincides with the large fire in the early 1900s. At several sites pockets of older forest were apparently skipped by fire, and spruce trees in this forest were between 140-190 years old. The Lowland Spruce – Fir Forest is dominated by red spruce, with paper birch and white cedar. The understory has a dense carpet of mosses, with red stem moss and Broom moss being the dominant species. Balsam fir is surprisingly sparse to absent.

One of the region's best examples of **Montane Spruce – Fir Forest** occurs near the top of Farrar Mountain, in the southwest corner of the unit. The canopy is dominated by mature spruce, with about 85 percent canopy closure. Scattered balsam fir, yellow birch, and heart-leaved paper birch occur in the canopy, and the regeneration layer is mostly spruce with some sugar maple and beech. There is no evidence of past harvesting. The basal area is 130 square feet per acre and red spruce older than 200 years were found.

Acidic Cliff communities, such as those at Turtle Ridge, occur on steep exposed rocky areas, with granite the primary bedrock component. Red spruce and northern white cedar grow at the top of the cliffs, while the rest of the cliffs support scattered patches of common polypody, marginal wood fern, mountain maple, and beech fern. The rare fragile fern was found at several sites.



Ecological Reserve

The 11,080 acre Nahmakanta Ecological Reserve, situated north and northeast of Nahmakanta Lake on either side of the Appalachian Trail, is the largest Reserve in the state’s system. Also known as the ‘Debsconeag Backcountry’, the Nahmakanta Ecological Reserve encompasses a network of remote hiking trails and isolated ponds prized for their intact, native brook trout fisheries. East of Nahmakanta Lake, the Reserve includes the watersheds of 5th through 8th Debsconeag Lakes. North of Nahmakanta Lake, the Reserve shares the intact watersheds of the Murphy Ponds with The Nature Conservancy’s neighboring Debsconeag Lakes Wilderness Area. In fact, together, the adjoining Nature Conservancy and BPL reserve tracts contain the highest concentration of remote, pristine ponds in New England.

Forest stands in the Ecological Reserve consist of a variety of mid-successional, burn-origin hardwood and softwood stands (aspen, red pine, spruce). Most of the uplands within the Reserve show some evidence of harvesting or fire, but some remote stands support old stands with trees over 300 years old, including a 320 year old northern white cedar and a 397 year old red spruce (Lortie et al. 1992). Many of the exemplary natural communities are partly within lands protected by the NPS as part of the Appalachian Trail Corridor.

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The intact and roadless watersheds, remote ponds, and native fisheries were all important features in choosing to establish this Ecological Reserve. Moreover, the diversity of intact forest types in an unfragmented setting enabled the Reserve to meet all the Ecological Reserve designation criteria established by McMahon (1998) and later updated by the Ecological Reserve Scientific Advisory Committee (2009).

A series of 50 baseline forest monitoring plots were established in the Reserve in 2005. Data from these plots is used to compare Reserve forests to lands managed for timber and to track ecological changes over time. (Other scientific studies, both within and outside the reserve, may also be underway at various times.)

Fisheries

Most of the waterbodies on the Nahmakanta Unit support cold water fisheries, such as brook trout, lake trout (togue), and landlocked salmon. Fifth and Sixth Debsconeag Ponds, Leavitt Pond, Big Murphy Pond, and Crescent Pond are periodically stocked by the Maine Department of Inland Fisheries and Wildlife (MDIFW) with hatchery reared brook trout. Long Pond is stocked with splake (a hybrid of brook trout and lake trout). Lake trout is the principal species sought by anglers in Nahmakanta Lake, Wadleigh Pond, and Fourth Debsconeag Lake. Lake trout were stocked in Nahmakanta and Fourth Debsconeag Lakes beginning in the 1970's and early 1980's, and the population at Fourth Debsconeag Lake is now self-sustaining, while Nahmakanta Lake is still stocked periodically (Tim Obrey, MDIFW, 2011).

Nahmakanta Lake is oligotrophic, that is, the waterbody is low in nutrients and high in dissolved oxygen, and thus supports outstanding cold and warm water fisheries, with the principal species being white perch, landlocked salmon, and lake trout. Nahmakanta, Pollywog and Rainbow Streams provide the necessary spawning and nursery habitat to maintain the wild salmon population in the lake.

Wadleigh, Female, Gould, Pollywog, Tumbledown Dick, Prentiss, Rabbit, and Sing Sing Ponds all have native brook trout populations and have never been stocked. Henderson and Stratton Ponds on the Public Lands' border also have native brook trout. As such, all of these ponds are considered 'Heritage Waters' and fall under the protection of Maine Law. Any proposal to stock one of these ponds would need review and consent from Maine's Legislature, and other management strategies must be implemented prior to considering stocking (Bonney, MDIFW, 2009). Native brook trout fisheries are considered declining throughout their range in northeastern North America, and Maine is known to have the most extensive intact populations in the United States.

Wildlife

The variety of forest types, along with the streams, lakes, ponds and wetlands on the Nahmakanta Unit, provide habitats which support wildlife characteristic of the central and north Maine woods, such as moose, beaver, deer, bear, coyote, squirrel, hare, muskrat, raccoon, fisher, marten, mink, weasel, skunk, bobcat, otter and lynx. Birds of particular interest include ruffed grouse, loons, bald eagles and osprey, although there are

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no known eagle or osprey nests on the unit. For lynx, the unit is on the southern edge of the habitat range. Even turkeys have been sighted occasionally (Jay Hall, personal communication). The ridgeline's high softwood forests on Wadleigh, Farrar, and Female Mountains may support uncommon species such as the blackpoll warbler, Bicknell's thrush, spruce grouse, boreal chickadee, white-winged crossbill, and three-toed woodpecker. In 1992 eighty six species of birds were identified by biologists while conducting other field work.

Stands with a high proportion of den trees and snags on the Unit have a relatively high value for wildlife and support populations of cavity nesting and roosting birds, and denning mammals. Former burned areas where mature aspen is the dominant species are occasionally used by songbirds, raptors and grouse. The acreage of these mature early successional-type stands has been reduced as a result of salvage timber harvesting which is converting over mature aspen and birch stands to younger mixed wood stands.

Mixed wood forests tend to support more species than the burn-origin type because of greater variability. A few northern hardwood stands skipped by fires were also not harvested and now contain some relatively large, old trees; an example is east of Tumbledown Dick Pond. Some mammals with a preference for northern hardwood include white-footed mouse, porcupine and northern flying squirrel. The northern hardwood type also provides important food sources, such as beech nuts among others, for black bear, fisher and deer.

The snowshoe hare is dependent on dense young softwood stands for protection from avian and mammalian predators such as great-horned owl, goshawk, coyote, red fox and fisher. Harvesting in some stands of the burn-origin aspen has released thick advanced softwood regeneration in the understory, thus creating hare habitat.

There are two Land Use Planning Commission² (LUPC)-zoned Deer Wintering Areas (DWAs) in the Nahmakanta Unit — 90 acres at Pollywog Pond along Gulliver Brook and 250 acres located in the northwestern corner of the unit near Black Pond. The Gulliver Brook DWA has not been harvested for at least 20 years and provides fair winter shelter for deer. The Black Pond DWA encompasses Black Pond and its tributaries. The Bureau is rehabilitating and expanding these deer wintering areas. There is a 206 acre DWA along Nahmakanta Stream that lies almost entirely within the NPS-owned AT Corridor. Current deer winter use is low.

History and Culture

“Nahmakanta” has most often been said to be a Native American name meaning “where there are plenty of fish.” Part of a Native American canoe and portage route between Moosehead Lake and the Penobscot River crossed the Unit and was used at times of high water, but it was a difficult, arduous route known for its many carries. The route linked Penobscot Pond, Second and First Musquash and Wadleigh and Pollywog Ponds (carries would be needed in some spots), and required a long carry from Pollywog Pond to Nahmakanta Lake. From Nahmakanta Lake, the route entered the Debsconeags or

² The Land Use Planning Commission replaced the Land Use Regulation Commission (LURC) in 2012.

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followed Nahmakanta Stream to Pemadumcook Lake, then continued eastward to the Penobscot River (Cook, 1985). Even the Indian name for this route suggests a long trip: “kokad jo-weengua-sebemsis anwangan.”

In 1992, the Maine Historic Preservation Commission (MHPC) performed a reconnaissance archeological survey of the portion of Nahmakanta Public Lands purchased with Land for Maine’s Future funding. This portion includes Nahmakanta Lake and part of the stream, as well as Wadleigh Pond, Sixth and Fifth Debsconeag Lakes, and other smaller ponds. The archeological survey tested for evidence of the use of the alternate canoe route described above. They found prehistoric archeological sites around these lakes to be scarce considering it was a known canoe route (albeit an alternate canoe route). Damage to the shorelines from dams installed for log-driving may be the reason. MHPC did not recommend any further testing of the area (Spiess et al. 1992).

History of Sporting Camps (excerpted from Hall, 2011 and Geller, 2014)

Sporting camps, many beginning as logging camps, appear to have operated in the Nahmakanta area since the 1880s or before. As early as 1913, Harry Iredell operated the main camps at Nahmakanta Lake with outlying camps on the west shore of Wadleigh Pond, and on Pollywog and Musquash Ponds. Robert McDougal took over ownership of Nahmakanta Lake Camps around 1920. At that time, the camps consisted of one large dining building and six small sleeping cabins. Visitors reached the camps on foot or by water, then primarily by float plane, until a logging road reached the area in the fall of 1979.

The sporting camps on Pleasant Point at Fourth Debsconeag Lake date back to the early 1900s, when L.W. Clement was the proprietor. Local lore has it that Theodore Roosevelt visited the region with his family during his presidency (1901-1909) to hunt bear. The first camp on the site was reportedly built by a trapper whose Native American wife intricately decorated the interior walls and ceiling with designs cut from birch bark. This “Indian Camp” still stands and is part of the commercial sporting camp today. Little evidence remains of the small sporting camp operated after 1913 by Sammy Smith on Prentiss Pond, although it appears to have survived in some form into the 1960s.

Numerous changes in owners and proprietors of the sporting camps have occurred over the years, with periods of disuse and neglect, followed by restoration work. Repairs were



Remains of fireplace at the former site of Wadleigh Pond Sporting Camps.

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often made using logs and lumber salvaged from abandoned logging and sporting camps in the area.

A telephone line was installed between 1913 and 1922 running northwest from Pemadumcook Lake to Nahmakanta Lake sporting camps. A branch line served Fourth Debsconeag Lake sporting camps. This line remained in service as late as 1953, greatly improving communications.

History of the Forest, c. 1828-1930 (excerpted from Hall 2011)

The forests of the Nahmakanta Unit experienced profound changes beginning in the 19th century. In 1828, the newly created State of Maine began conveying forest land in T1 R11 WELS and Rainbow Townships to private individuals. Various fractional ownerships ultimately were acquired by Penobscot Chemical Fibre Company (all of T1 R11 and south part of Rainbow), Great Northern Paper Company and the Stearns family at the north end of Rainbow.

From 1850 through 1870, the first wave of timber harvesting took place in Nahmakanta for white pine and the best spruce logs to feed over 400 sawmills between Old Town and Bangor on the Penobscot River. The straightest, healthiest white pine standing next to streams and outstanding groves of red spruce were cut. Steep, bouldery or more remote areas were bypassed.

The regenerating forest was ready for a second wave of cutting in the 1880's to 1910. The harvest consisted of spruce logs and long pulpwood, with individual pieces often being 50 to 60 feet long.

Log Driving: River driving was the prime method of transporting logs during this time, and the principal driving streams in the Nahmakanta Unit were Rainbow Stream and Nahmakanta Stream. Not only were there six driving dams between Rainbow and Nahmakanta Lakes (some gated dams, some just roll dams³), there was also a 180 foot wooden sluice at a narrow, sharp turn and 6100 feet of abutments along stream banks, many ballasted with rocks, to keep the logs in the strong current and prevent hanging on ledges. The dam at the Nahmakanta Lake outlet raised the water level between 1 to 2 meters above its current level (Spiess et al. 1992).

Nahmakanta Stream was considered “drivable” and included Pollywog, Wadleigh, “Muskrat”, Penobscot and Long Ponds. Long logs were driven a distance of 16 miles from the head of Muskrat Ponds to Pemadumcook Lake. Upper Nahmakanta Stream had three driving dams, one each at Pollywog, Wadleigh and “Muskrat” Ponds, and a dam at the south end of Nahmakanta Lake with three gates and a six foot head. The boulders and small waterfalls at Fourth and Fifth Debsconeag Lakes made driving logs infeasible, but a squirt (aka splash) dam was installed on the outlet of Fifth Debsconeag Lake providing an extra push of water for the drive further downstream. Harvested wood at

³ Some dams had gates which could be used to control both the flow of water and logs; other dams were simple “roll dams” that provided deeper water behind the dam and an angled approach to the dam’s crest over which the logs would roll unaided.

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Sixth Debsconeag Lake was hauled on a two-sled road to a landing at Nahmakanta Lake. Today, all that remains of these vital components of the drive are the rocks and gravel side wings and remnants of a wooden dam and a gravel wing dam at the outlet of Nahmakanta Lake.

In 1912, the cost to drive long logs from Rainbow Lake to Nahmakanta Lake was estimated to be \$ 0.75/1000 board feet and to drive long logs from Nahmakanta Lake to Pemadumcook Lake \$0.50/1000 board feet.

The difficulty of driving long logs down the gorge below the outlet and dam at Pollywog Lake is well-documented. A.G. Hempstead regarded Pollywog Stream as “one of the most beautiful and terrible of waterways.” An article by John Morrison in the May 1928 issue of The Northern detailed the clearing of a bad log jam in the gorge during the 1907 drive. The jam was eventually cleared, but not before it claimed the life of a 24 year old, experienced riverman named J.P. “Brownie” Brown from Edmundston, New Brunswick. Author Robert Pike, in his book Tall Trees, Tough Men, tells how Brownie’s comrades “nailed his spiked boots to a maple tree beside the trail, and they (the boots) stayed there for more than 20 years.” By 1922, the dangers at the gorge were greatly reduced by rebuilding the Pollywog Pond dam to attain deeper water, and by the practice of floating only short wood through the gauntlet.

Spruce Budworm Epidemic: The spruce budworm (“bud moth”) epidemic had its greatest impact on this area during 1912-1922 and again in the 1970s to early 1980s. In T1 R11, budworm began feeding on fir by 1912/1913. By 1915, there was 99 percent fir mortality, so the hungry caterpillars turned their attention to a less preferred but still acceptable food source — red spruce and hemlock. Significant damage to spruce and hemlock was first noted in 1916. Light spruce mortality was seen in 1917, but the heaviest feeding did not occur until 1918. A report published in 1918 stated that “former spruce bud moth infestations have not ordinarily been serious. This one seems to be.” By 1921, spruce mortality ranged from 2 percent to 84 percent by section, with an average of 47 percent. Spruce saplings four feet or shorter were attacked and usually lost the top eight inches or so. The worst damage and heaviest mortality was in more open canopy mixed wood where spruce was often a major component, just as it is today, and in a few hardwood stands.

Budworm salvage in T2 R11 began in 1923 when trees as small as four inches in diameter at breast height (DBH), killed by the work of the budworm, were salvaged. At that time, about 15 percent of moth-killed wood was sap rotted to a depth of up to 1½ inches. After salvage operations, the region was still deemed a “first class fire trap”.

Over the course of a decade, this insect had fostered a devastating cycle of events. First the feeding budworm weakened or killed fir, spruce and hemlock. Then the weakened spruce was attacked by the spruce bark beetle, which was estimated to be responsible for 10 percent to 15 percent of the mortality. Finally, the then dead and weakened trees were blown over into a thick jumble, where wildfire often delivered the coup-de-grace.

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Forest Wildfire: The Nahmakanta region has a long history of wildfire. Although the pre-settlement forest experienced large fires on an average interval of at least several hundred years, the pace of wildfires picked up dramatically in the late 1800's as a result of human activities. Poorly tended campfires and dry, post-harvest logging slash made for a dangerous combination.

A series of wildfires in the area resulted from tree mortality from the spruce budworm epidemic and human activity during the first quarter of the 20th Century. Considerable widespread fires occurred in 1903, 1908, and in the early 1920s. The 1903 fire started at a point of land on the south shore of Nahmakanta Lake, north of Prentiss Brook and swept southeast. The fire damaged the soil, but in the southeast corner of T1 R11, the soil burned entirely to the ledge and boulders in many places, such as west of Tumbledown Dick Pond, where the forest is still recovering. However, the fire skipped the east side of this pond, where a stand of healthy ash and maple exists today. There are many scattered groves of old trees that escaped the fires either because of being in areas sheltered from the wind, or having wetter conditions, or lacking dry fuel. In some lightly burned clumps the pulp-sized softwood died while the hardwood and larger softwood survived. The Bureau often preserves these fire skips for their diversity.

The 1903 fire burned the forest “clean” (most of the trees were consumed), whereas the 1908 fire located farther west and south in T1 R11 killed the smaller trees while sparing most of the larger ones. For the most part, the soil survived this fire, except in places with steep slopes. Some of the acres burned again in 1908, such as north of Henderson Pond. A 1913 cruise estimated that 7,300 acres in T1 R11 burned in these two fires.

Fortunately, Maine characteristically has had ample moisture and so forests regenerate aggressively. By 1913 most of the burns had poplar, birch and cherry up to 10 feet tall. Only a few places had sparse re-growth where the fires severely burned soil. Some areas had plenty of green growth, but it was mostly raspberries or pin cherry. By 1920, hardwood saplings such as red maple, and spruce and fir seedlings could be found throughout the burns. Parts of Wadleigh Mountain were burned in 1908 and again in 1921, while portions of the Ecological Reserve burned in 1924.

Recreation Resources

Outstanding natural features attract recreationists to Nahmakanta Public Lands for a variety of activities. Fifty-seven lakes and ponds, two rugged gorges with sizable waterfalls, sand and gravel beaches, and several mountains with numerous ledges and cliffs form the foundation for the recreational opportunities at the Nahmakanta Unit. Visitors can choose from among the following activities: hiking/backpacking/walking, camping, hunting, fishing (brook, lake and ice), boating (motorized and non-motorized), ATV riding, snowmobiling, wildlife viewing/photography, horseback riding, cross country skiing/snowshoeing, rock climbing and dog sledding.

Sporting Camps Facilities

The Nahmakanta Unit is served directly by two commercial sporting camps. Nahmakanta Lake Camps, while not part of the state ownership, are within the A.T.

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corridor, and provide access to not only the A.T. but also Nahmakanta Lake, remote ponds, and hiking trails. Located on the north shore of Nahmakanta Lake, these camps have been in place since the 1870's and are now operated by the Hibbs family. There are nine rental cabins, with a main lodge. Spring, summer and fall are the primary operating seasons at the camps. However, in most winters, the cabins are available and dog sled trips are offered. Cross-country skiing and snowshoeing are also attractions during the winter season. The camps parcel is subject to an NPS conservation easement which specifies the permitted uses of and activities on the parcel; the Bureau is the Third Party Holder of the easement, with a right to enforce the terms and provisions of the easement.

Debsconeag Lake Wilderness Camps is on the north shore of Fourth Debsconeag Lake and is operated by the Chewonki Foundation. These camps date back to the early 1900s and now consist of six camp buildings, a main lodge and eight tent platforms with yurts. Chewonki Foundation holds a lease from the State for these camps and operates a wilderness camp for girls from June through mid-August. The camps are available for rental by the public at other times of the year. Guests usually travel by water to reach the camps, using a boat landing on the north shore, at the end of Fourth Debsconeag Road, about three-fourths of a mile west of the camps.



Lakeside camp at Debsconeag Lake Wilderness Camps.

The Bureau has considered a need for expanded parking for camp staff and guests in the vicinity of the road end and boat landing, to reduce congestion and competition with the public for the limited parking space available at the existing site, and a need to provide for occasional overflow parking. Details on proposed parking to meet these needs are provided in Appendix F.

Camping

A total of 22 campsites are available on the Nahmakanta Public Lands, almost all on lakes, ponds or streams—including ten *drive-to*, eight *water-access* and four *hike-to* sites. Within the Appalachian Trail Corridor, along the western, eastern and southern shore of Nahmakanta Lake are seven campsites accessed by the A.T., water, or a short walking path. Camping use peaks in July; however, A.T. campsites see their highest use by through-hikers in May/June and September/October. The two campsites located at the south end of Nahmakanta Lake are particularly popular, as well as the Musquash Field campsites which can accommodate large RVs, and the Musquash Stream campsites.

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Water access campsites are not as frequently visited by Bureau staff, so use of these sites is not as well documented. Bureau staff have observed a substantial increase in camper-trailers using the drive-to campsites in the Unit recently.

Eighteen (18) campsites have Maine Forest Service (MFS) authorized campfire rings, and four campsites require a fire permit from the MFS for use of a campfire ring. Bureau rules permit camping anywhere without a fire, except a fire can be built on snow-covered ground. Camping in the A.T. corridor is at designated sites only. The table below summarizes the existing campsites within the Unit.

Nahmakanta Unit Campsites				
Name	# of Sites	Type of Access (See key below table)	Fire Permit Required	Comments
Tumbledown Dick Pond	1	H	Y	on Tumbledown Dick Trail
Leavitt Pond North	1	H	Y	on Tumbledown Dick Trail
Leavitt Pond	1	D	N	on Jo Mary Road
Musquash Field	3	D	N	on Penobscot Pond Road
Musquash Stream	2	D	N	Between Jo Mary Road and Penobscot Pond Road
Wadleigh Pond – South	3	D	N	off Wadleigh Pond Road
Wadleigh Pond Narrows	1	W	N	hand carry boat access is at north end of pond
Wadleigh Pond – North	1	D	N	on Wadleigh Pond Outlet Road
Pollywog Pond – Southeast	1	W	Y	hand carry boat access is at north end of pond
Pollywog Pond – West	1	W	Y	hand carry boat access is at north end of pond
Nahmakanta Lake – South	2	H	N	on A.T.
Nahmakanta Lake – West	2	H/W	N	hand carry boat access is at south end of lake; can also access from A.T.
Nahmakanta Lake – East	1	W	N	hand carry boat access is at south end of lake
Nahmakanta Lake – East Beach	2	W	N	hand carry boat access is at south end of lake
Total Sites	22			

Key: D = Drive-to, H = Hike-to, W = Water Access

In 2010, a lean-to shelter was built on the Farrar Mountain snowmobile and ATV trail that is used as a day-use picnic site and is a destination desirable for the long distance views provided. However, the facility may also be used for overnight stays and so provides a unique primitive camping opportunity within the unit. The lean-to differs from the drive-to sites described above in that it is not accessible by 2WD passenger vehicle. The site is usually accessed with a snowmobile or ATV, but may also be reached on foot via the snowmobile/ATV trail.

[INSERT 11 X 17 NAHMAKANTA INFRASTRUCTURE MAP]

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[back side of 11 x 17 Nahmakanta Infrastructure map]

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Drive-to campsite at Musquash Stream.



Water-access campsite at Pollywog Pond.

Development of new campsites, particularly along the Debsconeag Backcountry and the Turtle Ridge loop trails, has been proposed over the years and during the development of this Plan. No designated campsites now exist in those areas and there is interest in enhancing backpacking opportunities within the Unit. New hike-in and water access campsites have also been proposed in the vicinity of Pollywog and Wadleigh Ponds, generally in association with proposed new trail segments. At Wadleigh Pond, the new facility would be a group camp on the site of the former sporting camp (as first proposed in the 1995 Nahmakanta Unit plan), accessible to ATVs and snowmobiles. Finally, consideration has been given to replacing the campsite west of the outlet of Pollywog Pond; campers without watercraft must ford Pollywog Stream to reach the site, which is challenging and hazardous when stream flows are high.

Hiking and Backpacking

Appalachian Trail — An estimated 9.25 miles of the A.T. traverse the Nahmakanta Unit. Travelling northbound, the A.T. follows the south bank of Nahmakanta Stream and the south shore of Nahmakanta Lake, passes an overlook on Nesuntabunt Mountain, and travels through Pollywog Gorge before leaving the Unit and heading north to Rainbow Lake. As shown on the Nahmakanta Infrastructure map (page 49), the NPS holds the land around the trail, as well as a buffer strip around Nahmakanta Lake. Southbound through-hikers of the A.T. arrive at the Nahmakanta Unit in peak numbers in May/June, while the peak months are September and October for the northbound hikers. Section-hikers also travel through the Unit while backpacking parts of the “100 Mile Wilderness” section of the trail. Day hikers use the A.T. in the Nahmakanta Unit to go to Nesuntabunt Mountain and Pollywog Gorge.

Turtle Ridge Loop — This trail traverses the ridge and provides breathtaking views of Katahdin and the scenic ponds and cliffs along the trail. It travels along Sing Sing, Rabbit, Hedgehog and Henderson Ponds. The trail is in the shape of a sideways figure 8 with trailheads on either end of the figure 8 (the east end trailhead at the Jo Mary Road, and the west end trailhead at the Penobscot Brook Road). Hikers can follow the two loops for approximately eight miles of hiking (slightly more from the Penobscot Pond Road trailhead), or two separate shorter loops (3.5 mile loop from the Jo Mary Road

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trailhead, and 4.5 mile loop from the Penobscot Pond Road trailhead). The Appalachian Mountain Club promotes the Bureau’s Turtle Ridge Loop Trail as a hiking option for its Maine Wilderness Initiative visitors.



Segment of the A.T. near Nahmakanta Lake.



Campsite on the shore of Nahmakanta Lake, within the A.T. Corridor.

Tumbledown Dick Trail — This four mile trail is located between the A.T. at Nahmakanta Stream and the Turtle Ridge east trailhead on the Jo Mary Road. The trail travels past Leavitt and Tumbledown Dick Ponds, each with a campsite, then runs parallel to Tumbledown Dick Stream to Tumbledown Dick Falls — a narrow chute which enters a pool. This trail provides a link between the Turtle Ridge Trails and the A.T. and Debsconeag Backcountry Trail.

Debsconeag Backcountry Trail — This trail is also a figure-8 shaped double loop trail that can be accessed either from the west at a parking area north of Nahmakanta Lake and west of Rainbow Stream, or from the east at a parking area located just west of Fourth Debsconeag Lake. The east side loop runs close by Fourth Debsconeag Lake, Fifth and Sixth Debsconeag Ponds and Stink Pond, and crosses open granite ledges above Seventh Debsconeag Pond with views of Nesuntabunt Mountain and Fifth Debsconeag Pond. The west loop passes Eighth Debsconeag Pond and runs along the east shore of Nahmakanta Lake. The two loops total 12 miles of trail. Short connector trails link the west loop to the A.T. north of Nahmakanta Lake and link the east loop to a trailhead and parking area near Fourth Debsconeag Lake.

Crescent Pond and East Pollywog Pond Trails — Newly constructed in 2011, the short Crescent Pond trail links into the A.T. near Crescent Pond, beginning at the north end of the Pollywog Pond, where there is a small parking area. A short spur trail (informally

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called “Brownie’s trail”) extends down the Pollywog gorge. The East Pollywog Pond Trail, constructed in 2012, connects the Crescent Pond Trail to the Wadleigh Pond outlet.



Stream crossing on the Turtle Ridge Loop Trail.



Trail junction on the Debsconeag Backcountry Trail.

The table below summarizes the approximately 30 miles of existing hiking trails within the Nahmakanta Unit.

Nahmakanta Unit Hiking Trails		
Name	Approx. Length (miles)	Hike-to Campsites
Tumbledown Dick Trail	4.2	2
Turtle Ridge Trail		
East Trailhead connector	0.6	0
East Loop	4.3	0*
West Loop	3.4	0*
West Trailhead connector	1.1	0
Penobscot Pond Road to Turtle Ridge connector	2.1	0
Debsconeag Backcountry Trail		
East Trailhead connector	0.5	0
East Loop	6.4	0*
West Loop	4.8	0*
West Trailhead connector	0.9	0
Crescent Pond Trail	0.5	0
East Pollywog Pond Trail	1.5	0*
Total trail mileage	30.3	

Note: Trail lengths are based on GPS and trail wheel data obtained in the field by the Bureau.

** = Campsites have been proposed for these hiking trails in the 1995 Nahmakanta Unit Management Plan and in the process of developing this Plan.*

There are also a number of unofficial hiking trails on the Nahmakanta Unit, developed by the two sporting camps over the years. Most of these are “angler trails” to remote ponds (to Gould and Stratton Pond, within the Ecological Reserve, for example).

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The Nahmakanta Unit seems especially well suited to provide new opportunities for multi-day backpacking opportunities. Consequently, consideration has been given to the creation of new, longer loop trails by linking up existing trails in the Unit. Under this “Great Circle Trail” concept, begun in 2009, the extended loop would encircle the entire east side of the Unit and connect Wadleigh Mountain with the Turtle Ridge and Debsconeag Backcountry Trails. Completing this loop could be a three to four day trip, during which backpackers would pass scenic spots such as Tumbledown Dick Falls, Turtle Ridge, Wadleigh Mountain and Pollywog Gorge, and many scenic ponds. A new section of the Great Circle Trail, between Penobscot Pond Road and the west loop of the Turtle Ridge Trail and following Musquash Stream, was constructed in 2013. The first part of the segment between the Wadleigh Pond outlet and Wadleigh Mountain was also completed.

There has also been recognition of the potential to link to hiking trails outside the unit, on adjacent Debsconeag Lakes Wilderness lands owned by TNC. This would create an expanded “Debsconeag Trail Network” with a “Rainbow Lake Loop.” Appendix F provides additional details on these proposed trails.

Fishing and Hunting

Fishing at the Nahmakanta Unit is primarily for cold water species. There is ample opportunity on the Unit for visitors to enjoy fishing in remote, backcountry settings. Brook fishing is best early in the spring as by mid-summer many brooks are subject to low and warming water. Pond and lake fishing is the most popular, especially in the largest and deepest lakes and in the more remote small ponds. Brook trout comprise the principal fishery in 16 of the 28 lakes and ponds on the unit, while lake trout are available to anglers in four of the larger lakes and ponds.

LURC (now replaced by LUPC), in the 1987 Wildland Lake Assessment, gave three of the Unit’s water bodies a fisheries rating of “outstanding” and nine a rating of “significant.” In addition, five lakes and ponds were given a resource value classification of “statewide significance” in recognition of the fishery and other natural values present. Eight ponds are zoned as “remote” by LUPC; public vehicle access is permitted no closer than a half mile to a Remote Pond by LUPC regulations. The table below summarizes the available fisheries related and LURC assessment data on the lakes and ponds within the unit.

Angling on the Unit is regulated by the MDIFW. Specific regulations for different waters can change from year to year. In the recent past, about 16 ponds have been open to general law fishing. The others have had at least one restriction in fishing method, size or creel limits. Nahmakanta Lake is open to ice fishing, and can be accessed by snowmobile at the south end. Eight of the water bodies on the unit are included in current stocking programs.

The Bureau’s 1995 Nahmakanta Unit Management Plan stressed the high priority of managing native fish species jointly with the MDIFW. At times, Bureau management recommendations are made as a result of fisheries surveys. As indicated above, at least

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18 of the great ponds in the Unit have been surveyed for depth and fish species present. A particularly important example of how these surveys can assist in planning for managing the resource is Tumbledown Dick Pond. The small size, limited depth and lack

Physical and Fisheries Data on Lakes and Ponds within the Nahmakanta Unit						
Water Body	Max. Depth (feet)	Size (acres)	Principal Fisheries (see key)	Stocked? (Y/N)	LURC Fisheries Rating (see key)	LURC Resource Class (see key)
Black Pond	8	127	BT	N	NA	3
Crescent Pond	17	9	BT	Y	NA	3
Eighth Debsconeag P.	no data	8	no data	N	S	2
Female Pond	65	99	BT	N	S	2
Fifth Debsconeag Lake	42	87	BT	Y	S	2
First Musquash Pond	6	40	none	N	NA	2
Fourth Debsconeag L.	150	223	LT	N	O	1B
Gould Pond	22	12	BT	N	NA	3
Harding Pond	14	48	no data	N	NA	3
Hedgehog Pond	3	5	none	N	NA	3
Leavitt Pond	30	51	BT	Y	S	2
Little Female Pond	4	15	BT	N	NA	3
Little Penobscot Pond	no data	31	no data	N	NA	2
Long Pond	50	370	BT, SP	Y	O	1B
Loon Pond	8	4	none	N	NA	3
Murphy Pond	27	9	BT	Y	NA	3
Nahmakanta Lake	110	986	LT, LLS, WP	Y	O	1A
Penobscot Pond	20	284	BT, SP	Y	S	1B
Pollywog Pond	58	146	BT, LT	N	S	2
Prentiss Pond	9	15	BT	N	S	2
Rabbit Pond	11	6	BT	N	NA	3
Second Musquash Pond	no data	35	none	N	NA	2
Seventh Debsconeag P.	no data	9	no data	N	NA	NA
Sing Sing Pond	14	17	BT	N	S	2
Sixth Debsconeag Lake	26	30	BT	Y	S	2
Stink Pond	no data	9	no data	N	NA	NA
Third Musquash Pond	no data	16	no data	N	NA	3
Tumbledown Dick P.	11	21	BT	N	NA	3
Wadleigh Pond	90	239	BT, LT	N	S	1B

Sources: Natural Resource Inventory: Nahmakanta (Cutko and Schlawin, 2012), Maine Lakes: Geographic & Morphometric Information (MDEP/MDIFW, 2010), Maine Wildlands Lake Assessment (LURC, 1987).

Key to Principal Fisheries

BT = brook trout, LT = lake trout, LLS = land locked salmon, SP = splake, WP = white perch.

Key to LURC Maine Wildland Lakes Assessment resource ratings

Fisheries: O = Outstanding, S = Significant, NA = No rating given.

Resource Class: 1A = statewide significance with 2+ outstanding values (may include fisheries), 1B = statewide significance with 1 outstanding value (may be fisheries), 2 = regional significance with 1+ significant values (may include fisheries), 3 = local significance or unknown significance with no significant or outstanding resource value, or limited information, NA = no rating given/missing data.

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of adequate spawning habitat in this pond make it susceptible to over-exploitation. Difficult access to this pond helped protect it, but the recently completed (2007) Tumbledown Trail, which connects the A.T. with the Turtle Ridge trails, passes right along its shore, where a campsite has been built. A 2012 survey found seven watercraft stored at the pond. These changes may present an opportunity for coordinated management, under which MDIFW may consider fishing restrictions while the Bureau manages the campsite and boat storage use along the trail.



Float-tube angler at Crescent Pond (within the A.T. Corridor).

Hunting on the Unit is also regulated by the MDIFW and is primarily for grouse, bear, deer, moose, and duck. Hunting is allowed almost everywhere on the Nahmakanta Unit, except for within 300 feet of picnic areas, parking areas, campsites, boat launches and marked trails. Hunting is prohibited in the A.T. corridor and active logging sites. Bear baiting on the Unit requires a permit from the Bureau.

Anecdotal evidence suggests that the deer population, although low, was increasing slowly in response to annual timber harvesting that began in autumn 2002. Any population gain from 2002 to 2008 was most likely lost to mortality during the very deep snow winters of 2007-08 and 2008-09. Since there seems to have been little if any increase in use of traditional deer wintering areas during the decade, more deer sightings may simply have been the result of more staff hours on site or the concentration of deer in active harvest blocks. Seeding of new logging road ditches to conservation mix (i.e., to establish a groundcover of grasses and forbs to reduce soil erosion and sedimentation) also helped to attract deer.

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Boating

As shown on the Nahmakanta Infrastructure map (page 49), there are hand carry boating facilities at Fourth Debsconeag Lake, Nahmakanta Lake, Pollywog Pond and Wadleigh Pond that are managed by the Bureau. Boat access to these waterbodies is primarily used by anglers, canoeists, kayakers, wildlife watchers and campers. The Nahmakanta Lake boating facility is located within the A.T. Corridor and designed to allow the best possible access for boaters while restricting motor vehicle access across the A.T. Corridor. Boaters drive to a cul-de-sac that is 430 feet from the lake to unload and load boats and dunnage, and then park their vehicles in an area off the Nahmakanta Stream Road. At the unloading/loading site, boaters can use a wheeled cart that is available to assist them in carrying their boats and gear to and from the water. This boating access is immediately adjacent to a popular set of campsites on the south shore of Nahmakanta Lake and along the A.T. The NPS controls improvements within the A.T. Corridor, and intends for this facility to remain for hand launching only, although during public scoping for this plan interest was expressed in expanding use of the site to include trailer launching. The NPS has administratively set a 10 HP boat motor limit for Nahmakanta Lake, as described in the 1994 Maine Appalachian Trail Club (MATC) *Plan for the Management of Nahmakanta Lake Lands* (see page 73 for additional details on NPS administration of the A.T. Corridor).



Vehicle barrier, boat cart and access trail at the south end of Nahmakanta Lake.



Debsconeag Lake Wilderness Camps dock and boat access at 4th Debsconeag Lake.

All-Terrain Vehicle (ATV) Riding

There are nearly 30 miles of designated “Shared Use Roads” in the Unit open to ATV riding. Additionally, there are nearly 10 miles of designated trails for ATV riding that are off of the “Shared Use Roads” (see the Nahmakanta Infrastructure map, page 49). These roads and trails are connected to a trail system located outside of the Unit originating from Kokadjo, to the west (please refer to the regional ATV trails map provided in Section III). There are no connecting ATV trails east, north, or south of the Nahmakanta Unit.

Nahmakanta visitors coming from the southeast use the Jo Mary Road to reach the Unit from Route 11, crossing the KI Jo-Mary Multiple Use Forest and entering the Nahmakanta Unit at the KI Jo-Mary Henderson checkpoint. However, KI Jo-Mary, Inc. policy does not permit ATV use in the KI Jo-Mary Forest. Visitors wishing to haul

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ATVs to the Nahmakanta Unit via the Jo Mary Road must obtain permission to do so at the Jo Mary checkpoint, near the turn-off from Route 11. Those given permission are given one hour to reach the Henderson checkpoint, which is monitored remotely by video camera from the Jo Mary checkpoint.

In 2010, an Adirondack shelter was built on the shoulder of Farrar Mountain for ATV riders and snowmobilers to use as a picnic area and/or overnight campsite offering a beautiful view of Katahdin. This shelter has been very well received by the public and is located along an existing ATV and snowmobile loop trail. This loop trail runs west along the old Farrar Brook Road to the shelter and westward to the boundary of the Unit. Near the west boundary the trail veers sharply to the east following a management road, passes south of Black Pond, and connects to Wadleigh Pond Road via a trail. Riders can complete this Black Pond Loop by traveling south on Wadleigh Pond Road and Penobscot Pond Road to Farrar Brook Road. ATVs are also allowed to use the 10 drive-to campsites in the Unit, all of which are on or near designated “Shared Use Roads.”



ATVs on the Black Pond Loop Trail (prior to 2009-10 trail widening).



Shared use road and snowmobile trail signage at Nahmakanta.

Public Use Roads and Management Roads designated for shared use and open to ATVs will be posted with “Shared Use Road” signs, as required by the 2000 Integrated Resource Policy (IRP) Section D 28. However, Shared Use roads may be periodically closed to ATV use when the roads are being used for forest management activities, for reasons of visitor safety.

Snowmobiling

The Nahmakanta Public Lands Unit is heavily used by snowmobiles. There are approximately 22.5 miles of designated “Shared Use Roads” open to snowmobiles with an additional 15 miles of available trails that are off the “Shared Use Roads.” As is the

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case in regards to ATV use, shared use roads may be periodically closed to snowmobile use when the roads are being used for forest management activities (and therefore plowed), for reasons of visitor safety.

Nahmakanta snowmobile trails include 10 miles of ITS 85/86, which is a busy trail of statewide and international importance with respect to recreational opportunity and economic vitality. ITS 85/86 extends for over 100 miles through the central part of the state, and each trail independently crosses hundreds of additional miles, reaching the borders of Quebec and New Brunswick, Canada. A new trail that was constructed in the Unit and known as the *Black Pond/Female Pond Loop Trail* goes around Farrar Mountain and Black, Female and Wadleigh Ponds eventually looping back to ITS 85/86 at the junction of Nahmakanta Stream Road and Wadleigh Pond Road.



Snowmobile on groomed ITS 85/86 at Nahmakanta.



Snowmobile on groomed primitive trail at Nahmakanta.

There are several regional trails that serve snowmobilers and pass through portions of the Nahmakanta Unit (please refer to the regional snowmobile trail map provided in Section III). The *Katahdin Loop Trail* travels through the Unit and also encircles the major lakes and towns in the Millinocket area. A regional primitive backcountry trail crossing to the north of the unit includes a short section that enters the Unit from the north at Murphy Ponds, continuing south to Wadleigh Pond Road and eventually connecting to ITS 85/86. Other regional trails include the *Farrar Mountain Loop Trail* which travels from near Big Spencer Mountain to Farrar Mountain and loops back along the ITS 85/86.

The Adirondack shelter on Farrar Mountain is also available to snowmobilers. The shelter and snowmobile trail to Farrar Mountain fulfills a goal stated in the Bureau's Seboomook Unit Management Plan. In the Seboomook Plan, the Bureau discontinued a snowmobile trail at Big Spencer Mountain leading to a fire warden's cabin when Big Spencer Mountain was deeded to the State as an Ecological Reserve. The Bureau's goal

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was to find a replacement trail in the same general vicinity as the Big Spencer Mountain trail. This trail and shelter at Farrar Mountain provides an alternative high elevation snowmobile destination with a scenic vista located in somewhat close proximity to Big Spencer Mountain, thereby attaining the Bureau’s goal.

The number of winter visitors likely exceeds the number of summer visitors to the Nahmakanta Unit in large part due to the ITS 85/86 connection. The Maine Snowmobile Association estimates between 2,000 to 3,000 snowmobiles pass through the Nahmakanta Unit on any winter weekend when weather and trail conditions are ideal.

Construction of a “bypass trail” for snowmobiles to use while logging trucks and related equipment for timber management operations are using the Jo-Mary and Penobscot Pond Roads in winter needs to be completed to re-route snowmobile traffic off the Penobscot Pond Road, as funds and/or logging activity provides the necessary resources. The completed segment of the bypass trail begins near the intersection of the Jo-Mary Road and Penobscot Pond Road, and extends south then west to Penobscot Brook Road. The un-built trail segment would continue west from Penobscot Brook Road to Penobscot Pond Road, where it would link up with ITS 85/86 near the west boundary of the unit.



Farrar Mountain Adirondack shelter.



Summer view from Farrar Mountain Shelter.

Snowmobile trails on the Nahmakanta Unit are maintained by four different groups. ITS 85/86 is maintained by the Town of Millinocket (Twin Pines Snowmobile Club), ITS 109 is maintained by the Jo Mary Riders Club, the Farrar Mountain and Black Pond Loop is maintained by the Ragged Riders Snowmobile Club, and the primitive Rainbow trail is maintained by the Northern Timber Cruisers.

In addition to the official trails described above, there are unauthorized primitive (narrow and ungrooved) snowmobile trails in the Unit. One such trail is in the vicinity of Bean Brook, following a former forest management spur road on the west side of the Ecological Reserve, and extending into the adjacent private lands in T2 R12 WELS. Another originates at Chesuncook Lake and crosses over the Unit’s boundary line from the north into T1 R12 WELS, ending at Black Pond Road near Little Female Pond.

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Timber Resources

The Bureau manages timber resources where allocated to provide a diverse forested environment and generate high quality-high value products to support Bureau operations and the local economy. Exemplary management that contributes to public values, including recreation and wildlife habitat, is the standard. Nahmakanta is the largest contiguous (except the Federally-owned A.T. corridor) tract under the Bureau's timber management, and is one of the Bureau's largest areas of regulated forest — those lands which the Bureau manages to yield a sustained flow of forest products and to improve the quality of the forest resource — allocated as a dominant or important secondary use. There are approximately 24,800 acres of regulated forest on the Nahmakanta Unit, covering about 56 percent of the land base.

Recent Harvest History

In T1 R12 WELS, harvesting by the previous landowner occurred on the northerly one-third of the township during the 1960's and 1970's and on the southeasterly and southwesterly corners of the same township in the 1970's to the early 1980's. The central portion of the township, with its large stands of fire-origin intolerant hardwoods, was not harvested due to poor markets, at the time, for aspen pulp. Extensive timber harvests occurred in T1 R11 WELS and T2 R11 WELS (Rainbow Township) in the 1960's and 1970's, followed by another series of harvests in the mid-to-late 1980's in the west-central part of T1 R11 WELS. There are no signs of harvests or roads readily visible on the easterly two-thirds of Rainbow Township, though this area undoubtedly experienced some timber cut before the fires of the early 20th Century destroyed the forest. Today the Bureau's ownership within Rainbow Township forms the majority of the Nahmakanta Ecological Reserve.

The Bureau began harvesting at Nahmakanta Unit in 2002 focusing on the extensive acreage of mature to over-mature aspen in the Deadwater Brook area. Most of these 3,000 acres were fire-origin stands, mainly intolerant hardwoods that received selection harvests through 2007. Subsequent harvests moved through the southerly portion of T1 R11 WELS on both sides of the primary access road in fire-origin stands, and in Northern hardwoods and hardwood/spruce-fir stands. Considerable acreage in spruce-heavy softwoods was thinned. Harvesting activities in T1 R12 WELS began in 2006 and became a focal point for selective harvesting within previously burned areas, and improvement harvests outside of the burned areas for modest quality wood.

Eleven years of Bureau-managed harvests at Nahmakanta Unit (2002-2012) have yielded 131,000 cords, more than from any other public lands during that time period. Nearly three quarters of the harvest volume was hardwoods, much of it aspen, and 91 percent of that hardwood was pulpwood.

Current Conditions

Softwood types in the Unit cover 4,800 acres, 19 percent of the Unit's regulated forest. These occur on all drainage classes, though they are least prevalent on well drained sites. Most stands are well stocked and average 30 cords per acre, with spruce (nearly all red spruce) making up about 55 percent of the volume. Another 16 percent of the stands are

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cedar, usually of poor quality. White pine, fir, red maple, and paper birch each make up about five percent of stand type volume. Most of the softwoods, except cedar, are of good quality though older fir is becoming defective and spruce is slow-growing on thin soils.

Mixedwood types are found on about 11,500 acres, 47 percent of the regulated acres. Species composition is roughly 35 percent spruce, 15 percent red maple, seven to eight percent cedar, yellow birch and beech, and five percent fir, paper birch, sugar maple, and aspen. There are three different types of mixedwood stands on the Unit. First and least common are fire-origin stands where fertility is sufficiently low to allow spruce-fir to be a significant component to the forest, but not so low as to preclude most hardwoods. These burn areas usually have stocking divided among five species: spruce, fir, paper birch, red maple, and aspen, with some pines and yellow birch, as well. The quality of softwoods is variable but usually good; for hardwoods, quality is best in bigtooth aspen stands. The other two types of mixedwood stands are similar in area, but different in quality. Spruce-Northern hardwoods stands tend to occupy some of the more fertile sites and hold good quality. Mixedwood types that were created by preferential past harvesting of softwoods are usually of lower quality and can be locally dominated by diseased beech.

Hardwood types cover almost 8,500 acres, 34 percent of the Unit's regulated forest. The quality of the trees is quite variable. Two distinct hardwood types exist in equal quantities. They are the Northern hardwood shade tolerant type and the fire-origin shade intolerant type dominated by aspen and birch. Aspen is the most common species of overall hardwood types at 23 percent volume—much more prevalent in fire origin stands, making up 40-50 percent. Within the hardwood forest spruce makes up about 17 percent of the hardwood stand volume, and paper birch makes up 12 percent. Red maple and beech are each at 11 percent of volume, with beech at about 20 percent in Northern hardwood stands and nearly absent from fire origin stands. Sugar maple is at nine percent and yellow birch is at seven percent, both being common in the Northern Hardwood stands.

Future Timber Management

Where timber management is the dominant use or is included among secondary uses, its management should favor high value and longer lived species of spruce, sugar maple, yellow birch, pine, and hemlock for timber quality and wildlife habitat, and retain oak. The objectives will include growing high value timber products, chiefly saw logs and veneer, while maintaining visual integrity and enhancing the diversity of wildlife habitat. Another two years or so of major harvests are anticipated, followed by a period of moderate harvests through 2016. By 2017 the stands treated in 2002 will be again ready for re-entry. Even with the large volume of timber harvested in recent years, the twenty-year annual average harvest will be in line with Bureau sustainable harvest level targets.

Softwoods will typically be managed with spruce being a key species, pine being favored, and fir being valued but short-lived. Mixedwood stands created by past softwood harvests generally have the poorest overall quality of any mixedwood stands on

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the Unit. These acres are ideal for encouraging softwood types to regenerate. Much of the fire-origin mixedwood stands can also be managed to revert to softwoods, but the natural spruce-hardwoods and the more fertile harvest-created mixedwood should usually be kept in mixedwood, favoring spruce, pine, and the more valuable hardwood species.

Hardwoods in the fire-origin, shade intolerant stands will be managed for aspen and birch while retaining selected large trees, almost always aspen or spruce, for stand structure. Omnipresent seedlings and saplings will be nurtured. Areas where aspens sprout heavily following a harvest will be managed for that regeneration unless limited soil fertility makes reversion to softwoods more desirable. In the Northern hardwood stands, the objective will be to continue improving the overall stem quality, generally through selection harvests and favoring sugar maple, yellow birch, spruce, ash, and any oak or pine.

Transportation and Administrative Considerations

Road Access to the Nahmakanta Unit

The Bureau does not own a complete legal right of way to the Nahmakanta Public Lands Unit. A right of way will be granted from Kokadjo across the Plum Creek ownership as a provision of the Moosehead Region Concept Plan permit from the Land Use Regulation Commission (replaced by the Land Use Planning Commission in 2012), and the Bureau expects to obtain legal rights across the AMC owned “Roaches Tract” as well, through negotiations now in progress. In the meantime, verbal permission has been granted from private landowners for the Bureau and the public to drive into the Unit.

The Unit is accessible to motor vehicles from two directions. Visitors can access the Unit from the west by using the Lily Bay Road from Greenville to Kokadjo. From Kokadjo travelers use a short section of the Sias Hill Road and turn east onto the Medawisla Road (aka Smithtown Road) and then onto Nahmakanta Road, which crosses the AMC Roach Ponds Tract and enters the Unit just north of Penobscot Pond, approximately 15.4 miles from Kokadjo. The route is paved until just past Kokadjo, and follows improved gravel roads thereafter.

The other motor vehicle access point is in the southeastern corner of the Nahmakanta Unit via the Jo-Mary Road. The Jo-Mary Road is privately owned and maintained, and managed by North Maine Woods (NMW); the road originates just off of Route 11 between Brownville and Millinocket at the Jo-Mary Checkpoint. Motorists using the Jo-Mary Road to get to Nahmakanta pay a fee at the checkpoint’s gate and travel through the *KI-Jo Mary Multiple Use Forest* to a second gatehouse—Henderson Checkpoint⁴—

³ The 1995 plan recommended that the Bureau remove its lands from the KI Jo Mary (KJM) system and work with KJM in establishing a checkpoint on the Jo-Mary Road in the vicinity of the Unit’s southern boundary to be staffed by the Bureau. The purpose of the second gate was to ensure that motorists making Nahmakanta their destination were traveling through the KI Jo Mary Multiple Use Forest, nonstop, to the Unit. Specifically, this controlled system assisted in discriminating between visitors of the KI Jo Mary System and the Bureau’s Public Land. Both gates are generally in operation from Memorial Day to mid-October. The Henderson gate remains open in the off-season. A phone is available outside the closed

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where the Jo-Mary Road enters the Unit, about 14.5 miles from Route 11. This checkpoint was established at Henderson Brook in the late 1990s and staffed by the Bureau. In 2009, an automated gate was installed alleviating the costs to employ staff to operate the gate.

The Bureau has a snowmobile easement on Plum Creek lands from Kokadjo, and across AMCs abutting land south of the Unit (the Roach Pond Tract). The current snowmobile access route across the Plum Creek lands is subject to relocation and is now being negotiated through the Bureau's Off-Road Vehicle Program. The route across the AMC lands continues east on Nahmakanta Road to enter the Unit just north of Penobscot Pond (the same route as described above for motor vehicle access from the west). AMC also has given permission for ATVs to use the snowmobile route across its lands.

Roads in the Unit

The Bureau's 2000 Integrated Resource Policy identifies three types of roads: public use roads, forest management roads (management roads) and service roads. Public use roads are specifically designed for public vehicular use, and will be either gravel or paved. Management roads are designed for timber management and/or administrative use but may also be used by the public, where there are no resource protection or safety concerns associated with general use. Service roads are used to meet the Bureau's operational needs, or the operational needs of facilities within leased areas. Shared use roads are public use or forest management roads that are specifically approved and signed for two or more recreation activities allowed on the same road at the same time (such as 2WD/4WD vehicles, ATV's, bicycles and/or horseback riding). In a few cases, such as within the ecological reserve, shared use roads are management roads maintained for recreation access and are rarely used for forest management.

Within the Nahmakanta Public Lands Unit, visitors have several roads available to access recreation sites (see Nahmakanta Infrastructure map, page 49). The Nahmakanta and Jo-Mary Roads are public use roads once they enter the Unit (Nahmakanta Road becomes Penobscot Pond Road within the Unit), and these meet up with the Wadleigh Pond and Nahmakanta Stream Roads (both also public use roads). Deadwater Brook Road extends eastward from Wadleigh Pond Road, between Jo-Mary Road and Nahmakanta Stream Roads; the west half of the road (ending at a gate) is a public use road and the east half is a management road. Drive-to access is thus provided to several campsites, trailheads and water access points. There are a total of 30.5 miles of public use roads on the Unit; 18 miles of these public use roads are maintained in spring and fall on an "as-needed" basis, while maintenance on 12.5 miles of these roads, which are not as heavily used, may receive maintenance on a three year rotation.

The table below summarizes the public use roads and management roads within the unit, and the motorized recreation trails (snowmobile and ATV) that are associated with these roads. (The few short segments of motorized trails not associated with public use or

gatehouse at Henderson for emergency use and communication with the Jo-Mary Checkpoint during operating hours in season.

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management roads are not listed in the table, nor are the numerous management roads that are not presently used for public access or motorized recreation.) In the table, (P) denotes passenger vehicle use, (A) denotes ATV use, and (S) denotes snowmobile use.

Nahmakanta Unit “Shared Use” Public Use and Management Roads and Associated Motorized Recreation Trails			
Road Name	Approx. Length (miles)	Uses Allowed	Description/Comments
“Shared Use” Public Use Roads			
Jo Mary Road	5.0	P, A	Approx. 1 mile segment from south boundary of Unit to top of hill near Leavitt Pond campsite is not shared use (ATV use is not allowed). Snowmobile use is allowed on ITS 85/86 at the western end of the road, although a parallel bypass trail is now available.
Penobscot Pond Road	2.8	P, A, S	Snowmobiles and ATVs are allowed from the unit boundary east to Penobscot Brook Road; only ATVs may use the remaining segment to the intersection with Jo Mary Road and Wadleigh Pond Road, while snowmobiles use a bypass trail.
Penobscot Brook Road (formerly Long Pond Road)	0.9	P, A, S	Snowmobiles and ATVs are allowed on the segment from Penobscot Brook Road to the intersection with the bypass snowmobile trail; only ATVs may use the remainder of the road extending to Turtle Ridge trailhead and the gate at Penobscot Brook.
Nahmakanta Stream Road	3.2	P, A, S	Extends from Wadleigh Pond Road east to the A.T. corridor and the Nahmakanta Stream Bridge. Comprises part of the ITS 85/86 snowmobile trail.
Wadleigh Mountain Road	1.3	P, A	The public use portion of the road extends west about 1.3 miles, after which it becomes a Management Road terminating at an informal trailhead for a hiking trail up Wadleigh Mountain; the shared use segment (open to ATVs) turns north at 0.9 miles and terminates at a gravel pit. (The west branch and trailhead will be closed once the Wadleigh Fire Tower is removed or rehabilitated and the Wadleigh Mountain hiking trail is built.)
Deadwater Brook Road (west segment)	2.0	P, A, S	Public use segment ends at a gate about two miles east of Wadleigh Pond Road. The gate is closed during the summer season to exclude passenger vehicles.

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Nahmakanta Unit “Shared Use” Public Use and Management Roads and Associated Motorized Recreation Trails			
Road Name	Approx. Length (miles)	Uses Allowed	Description/Comments
Wadleigh Pond Road	6.5	P, A, S	South terminus is at junction with Jo Mary and Penobscot Pond Roads, north terminus is at Pollywog Stream bridge, within the A.T. Corridor. The northern segment, between A.T. Corridor crossings, is within the Ecological Reserve. Road is part of the ATV and snowmobile trail systems.
Mileage Subtotal	21.7		
“Shared Use” Management Roads			
Fourth Debsconeag Lake Road	1.3	P, A, S	Gravel road extends east 0.9 miles from Nahmakanta Stream to the Debsconeag Backcountry Trail trailhead. Last 0.4 mile is a narrow natural surface road extending to the Fourth Debsconeag Lake boat landing, and is used by employees and guests of Debsconeag Lake Wilderness Camp and the general public. Limited parking is available near the boat landing and at the road end.
Deadwater Brook Road (east segment)	1.2	A, S	Extends from the gate at the end of west segment to a point just west of Tumbledown Dick trail. ITS 109 snowmobile trail follows this road and continues eastward across Tumbledown Dick Stream on a Management Road and a trail before exiting the unit.
Farrar Brook Road	4.0	P, A, S	Road terminates 4.0 miles west of Penobscot Pond Road, intersecting with Farrar Mountain ATV/ snowmobile trail. (This road is not a permanently designated snowmobile trail; snowmobile use is allowed only in years when there is no potential conflict with timber harvesting activity and road use.)
Wadleigh Pond Outlet Road	0.6	P, A, S	Connects Wadleigh Pond Road to Wadleigh Pond outlet, with limited parking at outlet. Snowmobiles and ATVs may cross outlet ORV/footbridge and continue west on Black Pond Trail.
Prentiss Pond Road	0.3	P, A	Shared Use portion of road extends only a short distance off Nahmakanta Stream Road, although the Management Road extends further north and east.
Mileage Subtotal	7.4		
<i>Table continued on next page</i>			

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Nahmakanta Unit “Shared Use” Public Use and Management Roads and Associated Motorized Recreation Trails			
Road Name	Approx. Length (miles)	Uses Allowed	Description/Comments
Public Use Roads and Management Roads with Motorized Use (“Multiple Use” Roads)			
Penobscot Pond Road Bypass Trail (Management Road segment)	0.5	S	Trail follows a Management Road for approximately one half mile south from Jo Mary Road. Bypass is part of the ITS 85/86 snowmobile trail.
Black Pond Road (Management Road)	4.0	S, A	Road has been improved for timber management purposes from west unit boundary eastward to the vicinity of Little Female Pond, where a new half-mile connection to abutting lands to the north is planned. Will be gradually extended eastward on the Black Pond ATV/ snowmobile trail. BPL is exploring linking this road to Wadleigh Pond Rd. by upgrading the trail to a management road. West end of road is linked to Farrar Brook Rd. via Farrar Brook ATV/sled trail.
Murphy Pond Road (Management Road)	1.9	P, A, S	Passenger vehicle use ends at a gate approx. 1.5 miles north of Pollywog Stream bridge, where trailhead parking is provided; although not signed as shared use, a limited amount of ATV occurs, primarily by hunters; a primitive snowmobile trail also follows this road, connecting to the regional trail system.
Nahmakanta Lake Camps Road (Public Use road)	0.5	P, A	Road is within A.T. Corridor and Ecological Reserve and used to access Debsconeag Backcountry west trailhead and the commercial camp from Wadleigh Pond Road; road is gated at entry to camp property, which is on Federal land and is not part of the Nahmakanta Unit.
Mileage Subtotal	6.9		
Motorized Recreation Trails (not on Public Use or Management Roads)			
Farrar Mountain Trail	3.2	S, A	Trail connecting Farrar Mountain Road and Black Pond Road (provides trailside lean-to shelter with scenic elevated view from shoulder of Farrar Mountain).
Black Pond Trail	2.0	S, A	Recently constructed ATV and snowmobile trail connecting Black Pond Road and Wadleigh Pond Outlet Road, with an ORV/footbridge over Wadleigh Pond outlet. Part of Black Pond Loop trail that encircles west side of Unit.
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Nahmakanta Unit “Shared Use” Public Use and Management Roads and Associated Motorized Recreation Trails			
Road Name	Approx. Length (miles)	Uses Allowed	Description/Comments
Penobscot Pond Road Bypass Trail	0.9	S	Trail connecting Management Road segment of bypass trail to Penobscot Brook Road.
Farrar Mountain Connector Trail	0.8	S	Trail extends south from junction of Farrar Brook Road and Farrar Mountain ATV/snowmobile trail, linking to Nahmakanta Road outside the unit.
ITS 85/86 south of Fourth Debsconeag Lake	0/9	S	Trail segment between Fourth Debsconeag Lake Road at Debsconeag Backcountry east trailhead and east boundary of the unit.
ITS 109 extension from Deadwater Brook Road	0.9	S	Trail segment between end of the Shared Use portion of Deadwater Brook Road and east boundary of the unit. Crosses Tumbledown Dick Stream on management road before turning south then east to exit unit.
Mileage Subtotal	8.7		
Management Roads and Service Roads with No Motorized Recreation Use			
Pollywog Pond Road (Management road)	0.6	P	Road is along boundary of Ecological Reserve; links parking area/trailhead and carry-in boat access on Pollywog Pond to Wadleigh Pond Road.
Debsconeag Lake Wilderness Camps Service Road/Trail	0.5	P, A	Used only by camps staff to shuttle supplies to the camps from parking area near boat access facility. Most of this length is a trail suitable only for lessee ATV or snowmobile use.
Mileage Subtotal	1.1		

In general, public use roads are maintained for two-wheel drive travel by vehicles with reasonable ground clearance. Occasionally, just the tops of large boulders or ledge outcroppings may protrude from the roadbase, presenting an obstacle for low clearance vehicles. A prudent motorist travelling at reasonable speed will be able to avoid these occasional hazards, and every reasonable effort to remove, bury or mark such hazards will be made during periodic road maintenance. That said, the condition or drivability by 2WD vehicles of all road types on the Unit can best be described as “variable.” Due to the infrequency that some roads are used or inspected, or due to the difficulty of marshaling repair equipment to remote sites, any road on public lands could have a washout, one or more blown down trees, beaver flooding, etc. and this condition could persist for several days or even weeks before repairs are made.

Management roads are not maintained to be drivable by 2WD vehicles. Typical obstacles encountered on management roads include protruding rocks, seasonally soft road surface (especially next to ditches) or drive-through water bars installed to prevent road washouts

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during periods of low use. Management roads generally are available for vehicular access only to the extent they are maintained for management purposes. Some may be “retired” or “put to bed” when they are no longer needed for management. Others may be left available for public use as long as the condition of the road remains suitable for such use.

While this plan designates the classification status of existing roads, new roads will be evaluated to determine which should be maintained as public use roads and which should be designated as management roads. Management roads are further evaluated on a case by case basis to determine which should be retired and/or barricaded closed, and which should remain open to meet forest or recreation management objectives.

Information on road classifications can be made available to visitors via brochures, web sites and signs. Information on current road conditions often changes with time and will require a call or email to the Eastern Region Lands office in Bangor.

Proposed Road System Changes to Support Timber Management

The Bureau has given consideration to constructing a management road approximately one-half mile in length that would extend north from Black Pond Road at a point near Little Female Pond to the Unit boundary, and connect to a management road on the abutting Prentiss and Carlisle ownership, and thence to the Golden Road. The road would allow the Bureau more direct access to timber markets in Millinocket to the east and Canada to the west. The road could be gated or barricaded when not in use. This section has been used unofficially as a primitive snowmobile trail, which would be authorized. Implementing this proposal is dependent on the abutter’s approval of the connection to their management road linking to the Golden Road. However, this connection is currently not of interest to the abutter. The potential remains for the Bureau to pursue the northern connection, if the abutter’s interests change.

The Bureau is also exploring widening and upgrading to a management road the Black Pond snowmobile/ATV trail between the Wadleigh Pond outlet and the end of Black Pond Road. The trail segment that would be upgraded currently extends about two miles but Black Pond Road is being gradually extended east along the trail route to support timber harvest operations, and is expected to eventually reach within one-quarter mile of the Wadleigh Pond outlet. The trail segment was created in 2009-10 by clearing an old road, cutting a half mile of new trail, and replacing the footbridge at Wadleigh Pond outlet. The management road between Wadleigh Pond Road and the outlet would also be widened and upgraded to support truck traffic. The ORV/footbridge at the Wadleigh Pond outlet would be replaced with a bridge suitable for use by log trucks.

In combination, these road system changes would facilitate moving timber on the Unit either north or south to reach appropriate markets. The new link it would create to the private road system north of the unit may be of interest to abutters both north and south of the Unit, who could share in its maintenance as well as its use. As a stand-alone project, the Black Pond Road extension and Wadleigh Pond outlet bridge replacement would also benefit timber management on the Unit by providing an alternative to the

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current haul route that uses the management road linking Black Pond Road to Farrar Brook Road. The tight bends and grades imposed by the terrain on that management road require a reduced speed for log trucks.

ATVs would continue to use the Black Pond trail and other shared use roads within the Unit during timber management operations. Winter use of these roads for timber harvests would likely be infrequent (once every 10 years) due to plowing costs and hazardous driving conditions. Snowmobile use would not be permitted when the roads were plowed and being used for harvest operations.

These road system changes could potentially yield economic, public safety, and recreation access benefits. In addition to providing better access to wood markets, the road changes could potentially produce economic benefits in increased stumpage value for wood that can be trucked north with larger loads over the private road system. Replacement of the Wadleigh Outlet ORV/footbridge would address a problem with high flows frequently bypassing the bridge, during both summer and winter. The new bridge would also extend vehicle access to the west side of Wadleigh Pond, which could benefit the users of the proposed group camp site in that area. Public access to the Nahmakanta Unit from the north, across Prentiss and Carlisle land, would be secured, potentially providing a third access route via the Golden Road.

If the Bureau elected to move forward with the Black Pond Road extension and bridge replacement at Wadleigh Pond outlet, or if abutter interest and cooperation ultimately allow the combined proposals to go forward, the Bureau recognizes there would be impacts to address for recreation and wildlife as well as safety and visual concerns. Although alternate trails in the Nahmakanta Unit would generally allow ATVs and snowmobiles to avoid active harvest areas and timber haul routes, snowmobile activity would be curtailed during winters that the new haul route was in use.

The character of the Black Pond ATV trail would change on the section where it would be widened and upgraded to a management road, which would alter the riding experience. The recently developed trail segment was developed to provide a “remote” ATV trail riding experience without vehicle traffic, in contrast to most of the trail system on the unit which consists of shared use public access roads. The management road portion of the trail, as currently configured, is used for timber management for a season or two and then goes unused and is allowed to partially revegetate and naturalize for several years. With the combined proposals, the trail would convert to a permanent and major management road and would no longer provide a “remote” trail experience. If only the Black Pond Road extension and Wadleigh Pond outlet bridge replacement were implemented, the eastern portion of Black Pond Road could be closed to vehicle traffic when the route was not needed for timber management, to provide a “remote” ATV trail riding experience similar to the current experience.

Noise, dust and safety concerns associated with log truck traffic (which may be present at night in the predawn hours and through the day) would affect recreation sites and uses. Most affected would be the North Wadleigh Pond primitive campsite, which is adjacent

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to the road and may need to be relocated if the road is widened and upgraded. A private camp at the north end of Wadleigh Pond, located about 150 feet from the existing road, would also be impacted.

Safety concerns may be greatest at the Wadleigh Pond Outlet bridge and vicinity, which is an attractive area for visitors and will likely become a more active area as development of the Great Circle Trail, which crosses the bridge, advances. The approach of the Black Pond Road/Trail from the west does not have a clear sight line to the bridge and curves down a slope. These factors suggest special precautions would be necessary to avoid compromising public safety with the introduction of log truck traffic to this area.

Regarding potential wildlife impacts, the Black Pond Road/Trail passes through an area allocated to Wildlife Management and that will be managed as deer winter habitat; road construction would need to preserve sufficient connectivity of mature softwood cover to maintain its habitat value. To mitigate visual impacts, road construction would need to be designed to minimize visual intrusion of the road on recreation sites and on scenic views from high point such as Wadleigh Mountain.

Continued Use of Trails and Roads for Motorized Vehicle Use in the Ecological Reserve

The Bureau is directed by legislation to decide if existing motorized uses may remain in ecological reserves. 12 MRSA §1805—*Designation of Ecological Reserve* allows existing motorized trails and roads to remain if all three of the following criteria are met: they are well designed and constructed and situated in a safe location; they have minimal adverse impact on the values for which the reserve was created; and they cannot be reasonably relocated outside the reserve. The Bureau has determined most existing motorized uses in the 11,080 acre Reserve meet all three criteria and can continue, but some motorized uses in the Reserve do not meet all three criteria and the conflicting use will be discontinued.

Specifically, the following existing motorized vehicular uses within the Ecological Reserve may continue:

- all motorized uses on Fourth Debsconeag Lake Road to the Fourth Debsconeag Lake boating facility,
- ATV use on the Debsconeag Lake Wilderness Camps Service Road/Trail for administrative purposes of the owners and staff of the facility,
- snowmobile use on the ITS 85/86 south of Fourth Debsconeag Lake,
- all motorized uses on the public use Wadleigh Pond Road (between the road's two crossings of the A.T. Corridor within the Ecological Reserve),
- all motorized uses on the short spur road from Pollywog Stream Bridge to the west Debsconeag Backcountry trailhead and the Nahmakanta Lake Camps gate,
- passenger vehicle and ATV use on Murphy Pond Road, from Pollywog Stream bridge to the gate and parking area south of Murphy Ponds, and
- snowmobile use of the primitive snowmobile trail on Murphy Pond Road, from Pollywog Stream bridge to Murphy Ponds, and the old Bean Brook spur road linking the Murphy Pond Road to abutting private lands to the west.

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Nearly all of these motorized uses are on public use and management roads (or, in one case, a service road/trail) that cannot be relocated as they provide necessary vehicular access to the leased and commercial camps on Fourth Debsconeag Lake and Nahmakanta Lake, respectively, and to hiking trail trailheads and/or provide necessary snowmobile trail linkages to regional trails outside the Unit.

Motorized use of the old management roads and skid trails connecting to Murphy Pond Road will be discontinued, with the exception of snowmobile use of the Bean Brook spur road, which is used to bring winter clients into the Nahmakanta Lake Camps. These spur roads and trails provide access only to bear baiting sites, a use which can be relocated outside the Reserve in the case of sites not accessed from Murphy Pond Road. The map figures on pages 73 and 74 depict motorized uses that will continue within the east and west sides of the Ecological Reserve. (Note: unshaded areas within the A.T. Corridor are also in NPS ownership but are not shown as such due to GIS data anomalies.)

Signage

Although excessive signage can detract from the aesthetic appearance of a road or trail system, too few signs can create a serious safety hazard. Public comments have overwhelmingly stressed that safety needs to trump aesthetics. In reality, the two are not necessarily mutually exclusive, if signs are carefully designed and properly maintained. Currently, the signage on the unit consists of 1) road mileage signs every half mile on the Jo Mary Road and other major trucking routes, 2) yard arm signs and signboards (kiosks) with maps at the two major entry points and at trailheads, 3) temporary road name signs on current trucking routes, to insure all truckers are calling the roads by the correct name when talking to other truckers and visitors with CB radios, and 4) warning signs and regulatory signs posted as needed, such as “logging trucks entering”, “No snowmobiling on plowed roads”, “caution narrow bridge”, etc., although some signs remain up longer than needed or are hand-written with “permanent” marker that fades to illegibility.



Yardarm sign at Nahmakanta entrance.



Directional signs at a major road intersection in the Nahmakanta Unit.

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In some past years, snowmobile clubs have been slow to remove their temporary intersection signs, which often refer to trails and destinations that are irrelevant or unattainable for summer visitors. The Bureau needs to work with the clubs to improve and standardize the appearance of sign “towers” or, where appropriate⁵, to ensure that they are removed from sight, if not from the site, between May 15th and October 15th each year. The Bureau should develop a set of sign standards and expectations that could become part of all future snowmobile trail permits.

Administration of NPS Lands and the Appalachian Trail

There are two documents outlining recreation and management responsibilities on the NPS-administered A.T. Corridor (which includes the entire shoreline of Nahmakanta Lake) passing through the Unit.

The 1994 MATC “Plan for Management of Nahmakanta Lake Lands” (see Appendix B) is a document that describes the general management policies for all A.T. Corridor lands in Maine, and specifies the Bureau’s recreation management responsibilities in the Nahmakanta Corridor, including: installing signs at the Nahmakanta Lake South End recreation area stating the prohibition against discharge of firearms; allowing the public to drive mechanized (or motorized) vehicles where the State owns rights of ways—the Nahmakanta Stream Road on the south end of the lake, and the Wadleigh Pond Road which crosses the A.T. south of Crescent Pond and at Pollywog Stream; allowing the public to drive motorized vehicles to Nahmakanta Lake at a turn-around where boats can be off-loaded, and operate a wheeled cart to assist in moving boats to the water; allowing a parking lot located along the Nahmakanta Stream Road for vehicles with boat trailers⁶; allow the Bureau to develop a total of seven campsites in four separate locations on Nahmakanta Lake, and the Bureau is responsible for constructing and maintaining campsites and the boat access and parking area.⁷

Every 10 years, the Bureau and the NPS sign a Memorandum of Understanding relating to the management of the NPS corridor lands through the Nahmakanta Public Lands. The most recent MOU was signed March 28, 2008 (see Appendix B). The MOU is designed to “establish management practices to allow the continuation of appropriate traditional uses of Nahmakanta Lake while also preserving an environment harmonious with the use of the Property as a National Scenic Trail.” The MOU describes and formalizes the Bureau’s recreation management abilities and responsibilities as described in the MATC plan, such as development/maintenance of the parking area and hand carry boat access and the four camping areas. Like the MATC plan, the MOU provides that the Bureau/State must pay for the recreational improvements, and must monitor and enforce their rules on these recreational sites. The NPS can eliminate sites if recreational use is

⁵ Some signs installed by the clubs are useful year-round, such as some “caution” signs, “curve ahead” arrows, some “stop” signs, etc., so these could remain in place, long term.

⁶ Boats with motors greater than 10 horsepower cannot be transported across Corridor lands (therefore, they are effectively eliminated from Nahmakanta Lake).

⁷ The Bureau can charge money for use of these facilities. The Bureau is responsible for enforcing Corridor rules and ensuring use of these sites does not interfere with A.T. hikers’ experience.

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interfering with the hikers' use of the A.T. or failing to preserve an environment harmonious with the use of the trail.

The 2008 MOU provides certain rights to the Bureau. Specifically, the MOU allows for public access for snowmobile use to Nahmakanta Lake; adds the Debsconeag Backcountry trail along the northeast shore of Nahmakanta Lake; adds a trail to Tumbledown Dick Falls from the A.T., and adds a connector trail from the A.T. at Crescent Pond to Pollywog Pond.

Wadleigh Mountain Foot Path and Fire Tower

As the second highest mountain on the Unit, Wadleigh Mountain offers outstanding views from its former Maine Forest Service fire tower (though surrounding trees have begun obstructing the view) and in the past the public has followed a foot path to and climbed the tower. However, both the 47 foot tower and access trail have deteriorated and are unsafe; repair of the tower will be expensive. The Bureau has taken interim safety actions: signs have been placed at the old trailhead and at the tower stating “Tower Closed – Unsafe” and an orange plastic barricade has been placed around the base of tower. During the first Nahmakanta Unit management planning process, a group called “Friends of Wadleigh Tower” supported the repair of the tower and trail. In 1997, an engineering firm conducted a field inspection and structural integrity analysis of the tower, and made recommendations for structural repairs. In 2002, the Maine Forest Service transferred all rights and ownership of the tower to BPL.

As an alternative to restoration of the tower, a trail loop could be built around the summit of Wadleigh Mountain, which would visit several ledge outcrops and thus substitute for views lost if the tower is removed. However, the tower provides a more dramatic panorama than any of the ledge outcrops, including a view of Katahdin, and trail building to the ledge outcrops would be expensive, with several runs of stone steps required. Also, the tower represents the potential main attraction to the west side of the Great Circle Trail, both visually and historically.

The Bureau needs to decide whether to invest in repairing the fire tower and renovating the trail leading to it (or provide access via the Great Circle Trail), or remove the fire tower and build a loop trail around the mountain with views from ledge outcrops.

In January 2013, the “Friends of Wadleigh” group submitted to the Bureau a preliminary proposal for restoration of the tower. Under this proposal, the group would be responsible for all materials and labor required to achieve a full restoration of the tower, to be performed under Bureau oversight. The Bureau is reviewing this proposal. A new engineering evaluation would be necessary to support any restoration.

Boat Storage

It has been a traditional Maine practice for individuals to store small boats at remote ponds during the boating season. Often, these boats are available for other visitors to use, with the expectation that the boat will be returned to its original storage location. A 2012 survey of boats stored within the Nahmakanta Unit found boats at 20 lakes and ponds,

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including Fifth Debsconeag Lake and Sixth and Eighth Debsconeag, Big Murphy, Little Female, Sing Sing, Prentiss, Tumbledown Dick, Rabbit, Wadleigh and First, Second and Third Musquash Ponds. Nine boats were stored at Crescent Pond, within the A.T. corridor. Additional boats are stored at ponds with camplot leases by the leasees. The survey covered only one half of the ponds and deadwaters within the unit, so it is likely that there are additional stored boats that were not recorded. The boats being stored (as many as 12 at one pond) are mainly aluminum skiffs and canoes. Although the owners of many of the boats are not identified, they appear to belong to both individual recreation visitors and commercial camp operators. Only 52 percent of the boats surveyed had some form of owner identification, such as name, phone number and/or registration sticker (often expired). Some boats are chained to other boats or to trees. Of 64 boats surveyed, 44 percent were locked.

The IRP contains the “Backcountry Pond Watercraft Storage” policy (Section D. 18) that allows for storage of private watercraft provided that they are stored at least 25 feet from the shoreline and from official trails and that the watercraft owner is identified on the watercraft. Watercraft that do not meet those conditions, or that are decrepit, may be removed by the Bureau. The policy also allows the Bureau to prohibit the storage of private watercraft on particular backcountry ponds, or to allow storage with other conditions.



Stored boats at a Debsconeag Backcountry pond. Stored boats at Prentiss Pond.

Given that a number of the boats stored within the Nahmakanta Unit do not have the owner identified on them, and that some are decrepit, it is apparent that greater enforcement of the boat storage policy is needed. In addition, the number of boats stored at some ponds may be of concern. The presence of stored boats may encourage a level of fishing pressure at remote ponds beyond the capacity of the pond to sustain. Along with increased enforcement (potentially including removal of unmarked and decrepit boats), consideration should be given to more rigorous oversight of boat storage within the unit. The Bureau should develop a workable and effective system to bring boat storage on the Unit in line with policy, and to guard against overuse of sensitive remote ponds.

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Unauthorized or Unofficial Hiking Trails

As mentioned previously, there are also a number of unofficial hiking trails on the Nahmakanta Unit, developed by the two sporting camps over the years, most of which are “angler trails” to remote ponds. These trails have contributed to the proliferation of stored boats at remote ponds, as described in the preceding discussion. An unauthorized trail from what is now the Debsconeag Lake Wilderness Camps on Fourth Debsconeag Lake to the Debsconeag Cliffs was also built by the former owners of the camp. Whether by informal agreement or simply inaction, the Bureau has generally permitted these trails to be maintained by the camps. However, the number of these trails has proliferated in recent years, raising several management concerns. The state lands are a public resource and uncontrolled development of trails by private entities for commercial needs may be considered not to be in the best public interest. The placement and design of these trails have not been evaluated as stipulated by the IRP trail establishment policy (Section D 23, p. 60), nor do the trails appear on public maps or brochures produced by BPL. The presence of blazed and signed but unmapped unofficial trails increases the likelihood that hikers (particularly those new to the area) may become confused or lost, which may compromise both visitor experiences and safety.

Helivac Sites

Visitor safety at the Nahmakanta Unit could be enhanced by the identification and clearing, if necessary, of helicopter landing sites to allow quick evacuation of people who are severely injured or experiencing a medical emergency. Potentially, two to three sites could be cleared and marked, as recommended by Lifeflight, the organization that provides this service. The Bureau should identify potential helivac sites that are consistent with resource allocations and as determined based on site considerations such as accessibility.

Vision for the Nahmakanta Unit

The Nahmakanta Unit lies at the southern edge of Maine’s vast North Woods. Recreation on Nahmakanta complements offerings in the Moosehead Lake and Katahdin regions. The largest public land unit in Maine, Nahmakanta has room to accommodate a wide range of recreational experiences desired by Maine’s residents and visitors—allowing wide open spaces for those desiring a wild, remote experience, as well as easily accessible drive-to opportunities, motorized touring routes and ample fishing and hunting ground. Touring routes for ATVs and snowmobiles pass near scenic ponds and overlooks, and can be accessed from larger trail networks in the Moosehead Lake and Katahdin regions, supporting the regional recreation economy. The popular ITS 85/86 is the major snowmobile route traversing the Unit. The Appalachian National Scenic Trail (A.T.) transects the Nahmakanta Unit providing numerous backpacking options in conjunction with trails linking to the A.T. within the Unit. The hiking trail system is part of a suite of backpacking opportunities that extend on to adjacent lands, which gives backpackers desirable multi-day loop trip options. A variety of day hikes are available to scenic overlooks, ponds and gorges.

The Nahmakanta Ecological Reserve, in concert with the abutting Debsconeag Lakes Wilderness Area, protects an intact, roadless area containing the highest concentration of remote, pristine ponds in New England. On the Nahmakanta Unit, seven ponds are designated Heritage Brook Trout Ponds, of which five do not have vehicle access. Walk-in access is managed to ensure the sustainability of the brook trout population and to provide a remote (walk-in) high quality fishing experience. Across the Unit, access to a number of other small ponds is also managed for a remote walk-in fishing experience, while Nahmakanta Lake, Wadleigh Pond, Pollywog Pond, and Fourth Debsconeag Lake may be accessed by vehicle.

Management of the recreation facilities and recreation uses on the Nahmakanta Unit models partnerships with abutting private landowners, conservation and recreation organizations and clubs, local communities and other regional recreation and ecotourism stakeholders. Use is carefully monitored and options explored with partners to expand recreation opportunities when needed in order to avoid levels of use that diminish the quality of the recreation experience or jeopardize fragile ecological communities or remote ponds.

Land management at the Nahmakanta Unit is guided by a statutory requirement for multiple-use management demonstrating exemplary land management practices. Forest management is third-party certified to ensure a high standard of sustainable forest management. The Bureau’s timber management priority is the production of higher value forest products, such as saw logs and veneer, while simultaneously fostering diversity of age classes and site-appropriate tree species, providing a variety of wildlife habitat (retaining selected low quality stems, for example), and protecting and enhancing significant natural, recreational and scenic resources.

Allocations for the Nahmakanta Unit

The following “allocations,” as shown on the Nahmakanta Dominant Use Allocations map on page 81, define general management objectives and direction for specific areas within the Nahmakanta Unit. (Secondary allocations are not shown on the map.) See Appendix C for a description of designation criteria and management direction for the various allocation categories.

Special Protection Dominant

- The Nahmakanta Ecological Reserve located north and northeast of Nahmakanta Lake on each side of the Appalachian Trail is the largest Reserve on state-owned lands. Part of the “Debsconeag Backcountry” area, the Nahmakanta Ecological Reserve contains intact and roadless watersheds, remote ponds, native fisheries, and a diversity of forest types. This area is also largely designated backcountry non-mechanized as a secondary allocation.
- The Turtle Ridge Backcountry Trail System contains an excellent example of Lowland Spruce-Fir Forest northeast of Long Pond, south of Rabbit Pond and between Sing Sing and Hedgehog Ponds. This area is also designated backcountry non-mechanized as a secondary allocation.
- One of the Region’s best examples of Montane Spruce – Fir Forest is located near the summit of Farrar Mountain.
- Two small areas of northern hardwood forest, one on the summit and eastern flank of Female Mountain and the other on the northeast side of a no-name hill southeast of Nesuntabunt Mountain are exemplary examples of late-successional (near old growth) forest stands.
- A 330 foot riparian buffer area around First and Second Musquash Ponds and Wadleigh Pond where populations of the Pygmy water lily, listed on Maine’s Endangered and Threatened Plant list, reside. This area is also designated remote recreation as a secondary allocation.

Wildlife Dominant

- Riparian buffers of 330 feet around all great ponds and along major flowing waterbodies,⁸ and around the Deadwater Brook Deadwater, Farrar Brook, and Musquash Stream.
- Riparian buffers of 75 feet around waterbodies less than 10 acres and minor flowing waterbodies⁹.
- The deer wintering areas at Gulliver Brook (generally north of Female Pond and Little Female Pond to the unit boundary) and Black Pond (generally north and west of Black Pond to the unit boundary).

⁸ Flowing water downstream from the point where such water drains 50 square miles or more.

⁹ Flowing water upstream from the point where such water drains less than 50 square miles.

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A secondary Timber Management allocation is also designated for the deer wintering areas and riparian buffers subject to wildlife, recreation, and visual concerns.

Remote Recreation Dominant

- A 500 foot buffer on each side of Tumbledown Dick Trail.
- A 500 foot buffer on each side of a one mile segment of Turtle Ridge Trail west of Sing Sing Pond to the trailhead.
- A 500 foot buffer on each side of newly constructed and proposed new segments of the Great Circle Trail in the vicinity of Pollywog Pond and Wadleigh Mountain and connecting to the Turtle Ridge Trail.

A secondary Timber Management allocation is also designated for the trail buffer areas, subject to wildlife, recreation, and visual concerns.

Visual Consideration Areas

- Visual Class I applies to both sides of designated public use roads and hiking trails (if not already protected by Special Protection allocations) and to areas surrounding trailheads and drive-to, hike-to and water access campsites (if not already protected by Special Protection allocations).
- Visual Class II applies to background areas that are viewed from trails along ridgelines, from public use roads, and from waterbodies.

Developed Recreation Dominant Class I

- Farrar Mountain Overlook and the Adirondack Shelter.
- Designated ATV and snowmobile trails.
- Drive-to primitive campsites and trailhead parking areas.
- Boat launch areas at Wadleigh Pond, Nahmakanta Lake, and Fourth Debsconeag Lake.

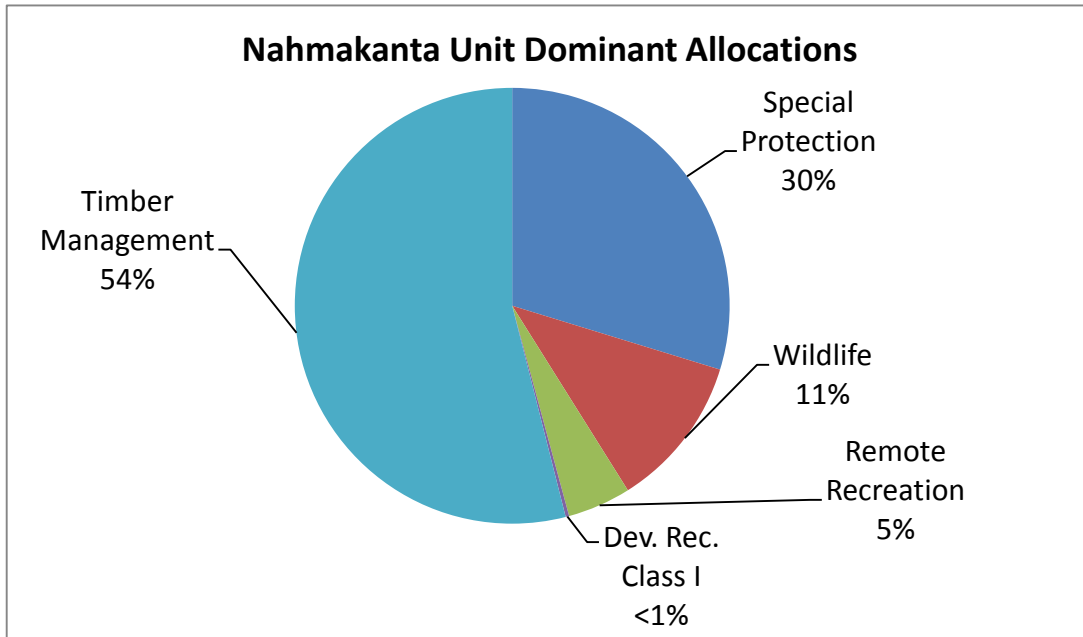
Timber Management Dominant

- All other areas not allocated above are designated Timber Management dominant. During the silvicultural prescription process, it is determined which timber dominant areas are subject to Visual Class II treatment. A Visual Class II designation assures that timber management will protect views from hiking trails, motorized trails, public roads, scenic overlooks and other recreation features. The majority of Timber Management Dominant acres in the Nahmakanta Unit is visible in the background from one or more of these recreation features and will be subject to Visual Class II treatment.

Nahmakanta Unit Allocations

Allocation	Number of Acres	
	Dominant	Secondary
Special Protection	12,910	Not applicable
Backcountry Non-Mechanized	0	9,125
Wildlife	4,925	Not applicable
Remote Recreation	1,995	355
Developed Recreation Class I	115	Not applicable
Timber Management	23,475	6,920

Note: acreages are representations based on GIS metrics rounded to the nearest 5 acres, and do not sum to the acreages by parcel due to measuring error and limits of GIS precision (above acres are overall high by approximately 3-4%).



**[INSERT 11 x17 NAHMAKANTA DOMINANT USE ALLOCATIONS
MAP]**

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(back side of Nahmakanta Dominant Use Allocations map)

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Nahmakanta Unit Issues/Opportunities and Recommendations

While allocations define the general management direction, management recommendations define specific actions to be taken during the course of the 15 year Plan period in response to identified management issues.

Issues/Opportunities	Recommendations
<i>11,080 acre Ecological Reserve</i>	
<p><u>Certain Motorized Vehicle Uses to Continue</u></p>	<p>The following existing motorized uses will continue in the Ecological Reserve, as provided below.</p> <ul style="list-style-type: none"> • Passenger vehicle use of Fourth Debsconeag Lake Road providing access to the Debsconeag Lake Backcountry east trailhead and the boating facility on Fourth Debsconeag Lake. This management road will be maintained “as needed” and, consistent with the requirements for roads within an ecological reserve, will not be widened or expanded in order to minimize its “footprint” within the reserve. ATVs and snowmobiles are allowed. • Administrative use of ATVs via the Fourth Debsconeag Lake “service road/trail” for the owners and their staff hauling supplies to the Debsconeag Lake Wilderness Camps from the end of Fourth Debsconeag Lake Road, near the boating facility. • Passenger vehicle recreation access on Wadleigh Pond Road from the Rainbow Township line north to Murphy Pond Road (which branches north from Wadleigh Pond Road after Pollywog Stream Bridge). ATVs and Snowmobiles are allowed. • Passenger vehicle and ATV use of the spur road connecting the end of Wadleigh Pond Road at Pollywog Stream Bridge to the west Debsconeag Backcountry trailhead and the Nahmakanta Lake Camps gate. • Passenger vehicle use of the Murphy Pond Road from the Pollywog Stream Bridge north to the gate and trailhead south of Murphy Pond.

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	<ul style="list-style-type: none"> • Snowmobile use of ITS 85/86 traveling south of Fourth Debsconeag Lake and the primitive snowmobile trail that uses the Murphy Pond Road in the winter. From the Pollywog Stream bridge this trail leads north to Murphy Ponds, then leaves the Unit onto TNC lands. The trail will be ungroomed. Also, use of the existing backcountry snowmobile trail located in the extreme northeast corner of the Unit. The trail originates at Third Debsconeag Lake, east of the Unit, minimally crosses the unit at the extreme northeast corner of the Ecological Reserve, and continues northwest on TNC lands.
<p><u>Certain Motorized Vehicle Uses to be Modified</u></p>	<ul style="list-style-type: none"> • Discontinue summer motorized use of the Bean Brook spur road and other former forest management roads and skid trails connecting to Murphy Pond Road. Use of Bean Brook Road as a primitive ungroomed snowmobile trail can continue. Bear baiting sites accessed via these side roads will be relocated outside of the Ecological Reserve, while sites accessed from Murphy Pond Road will remain.
<p><u>Proposed Mountain Bike Trail</u> A long-distance lodging to lodging mountain biking trail has been proposed that would cross a portion of the Ecological Reserve on the alignment of the ITS 85/86 snowmobile trail south of Fourth Debsconeag Lake, and on Fourth Debsconeag Lake Road. (Outside the Ecological Reserve, the trail would follow public use roads across the Unit.)</p>	<ul style="list-style-type: none"> • In concept, non-winter mountain bike use of the snowmobile trail within the Ecological Reserve does not conflict with BPL policy or Ecological Reserve legislation and is permissible. However, portions of the snowmobile trail near the Unit boundary that have recently been graded to facilitate grooming require restoration work to prevent soil erosion, and are not suitable for bicycle use at present. To allow bicycle use several wet areas of the trail in that vicinity would require hardening a portion of the width of the trail, such that snowmobile use would not be impeded.
<p><u>Invasive and Exotic Plant and Animal Species</u></p>	<ul style="list-style-type: none"> • Continue efforts to prevent the introduction of invasive and exotic species, including visitor education and enforcement of regulations directed at

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	<p>this issue. Priority education topics include the ecological threat posed by introduction of exotic plants and fish to water bodies and introduction of exotic plants/seeds by ATVs or horses, and measures visitors can take to minimize these threats. The lease for the Chewonki camp will specify protocols and standards for the management of their composting facility and mulching for erosion control on trails they are responsible for maintaining to minimize the risk of introducing invasive or exotic plants.</p>
<p><i>Fisheries Resources</i></p>	
<p><u>Native Fisheries Surveys</u> Several great ponds in the Unit have not been surveyed for wild and native fisheries</p>	<ul style="list-style-type: none"> • Cooperate with the MDIFW, Maine Audubon and Trout Unlimited in conducting further pond and stream surveys.
<p><u>Fish Passages</u> Improperly installed or designed culverts can impede fish passage on streams.</p>	<ul style="list-style-type: none"> • Identify and correct any road crossings of trout streams that prevent fish passage.
<p><u>Remote Pond Fishing</u> The Bureau seeks to provide a range of fishing experiences from drive-to ponds to remote walk-to ponds. Decisions need to be made as to which ponds will be designated “walk-to” only based both on recreational needs and sustainability of the fishery.</p>	<ul style="list-style-type: none"> • Identify ponds and brooks where vehicle access should be blocked and access provided only as walk-in based on fishery sustainability and recreational experience.
<p><i>Wildlife Resources</i></p>	
<p><u>Deer Wintering Areas (DWAs)</u> Maintenance and expansion of deer wintering areas is a statewide issue.</p>	<ul style="list-style-type: none"> • In 2012, a cooperative agreement with the MDIFW was approved for the Black Pond DWA with the goal of expanding and rehabilitating habitat through softwood regeneration and browse production to conform to (P-FW) Fish and Wildlife Protection Subdistrict requirements. Approval of the Gulliver Brook expanded DWA habitat management agreement is expected in 2014.
<p><u>Grouse Habitat</u> There is interest in increasing habitat for grouse on the unit.</p>	<ul style="list-style-type: none"> • Manage early successional (birch – aspen) forest to maintain, or increase where possible, mixed-age stands as primary grouse habitat.

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<i>Recreation Resources</i>	
<p><u>Hiking Trails to Brook Trout Fisheries</u> The 1995 Plan recommends that some remote ponds should be accessible for fishing opportunities and some should remain without official trails to them. However unofficial hiking trails have been blazed to some of the remote ponds, which have not been evaluated in terms of their suitability for the fishery or desirability recreationally. Most of this activity is an outgrowth of traditional sporting camp access. However, with the renewed interest in fishing for wild or native brook trout at remote ponds by anglers who are not camp clients, there is a possibility for conflict or overuse.</p> <p>The Bureau should develop a clear process for determining where fishery needs might indicate a walk-in status. It should also consider how best to provide a range of fishing experiences.</p>	<ul style="list-style-type: none"> • The Bureau will explore trail access fishing opportunities to certain destinations in the Debsconeag Backcountry and other areas of the unit with remote ponds. Possible destinations include Gould Pond and Third Musquash Pond. • The Bureau will inspect and evaluate existing trails for the purpose of identifying which should be maintained or closed, and will seek support from the MDIFW to determine if the fisheries can sustain this activity. • The Bureau will work to establish a formal partnership arrangement with the commercial interests on the unit to ensure all trails are properly located, authorized, and maintained as public trails. Information on the angler trails that are to be maintained for remote pond fishing would be made available in a revised brochure and/or on the Bureau’s website.
<p><u>Unauthorized Hiking Trails to Black Brook Deadwater and Debsconeag Cliffs</u> An unauthorized trail was cut in the summer of 2011 from Black Pond Road to the deadwaters. At least one canoe is stored at the deadwaters. NLC owner(s) use the trail for moose watching canoe trips in the Black Brook Deadwater.</p> <p>A trail along the Debsconeag Cliffs was established through the years without the benefit of Bureau input. The Bureau visited the cliff trail in July 2012 and found small diameter ropes permanently tied to trees to assist climbers negotiating two of the steepest sections of the trail. This situation presents a potential safety hazard assuming the ropes are not routinely inspected and/or if too many hikers use the rope at once. The existing trail also has the potential to cause disturbance of peregrine falcons that may nest there.</p>	<ul style="list-style-type: none"> • The Bureau will inspect the Black Brook Deadwater trail and determine if the trail’s route is acceptable, and if so, how to manage the proposed timber harvesting in the area in light of the trail. If authorized, the Bureau will develop trailhead amenities and will provide information on this trail in a revised brochure and/or website. • The Bureau will evaluate means to improve the safety of the rope-aided sections of the Debsconeag Cliffs trail including short re-routes or, if it is not feasible to adequately improve safety, discontinue the use of the ropes and build stone steps at the steepest sections as a safer alternative for hikers. The trail should not follow the top of the ledge to avoid disturbance of peregrine falcons. Instead, an overlook point could extend from the main trail set back from the cliff edge, in a safe

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	<p>location. The Bureau will also consider options for a more extensive reroute of the trail that with a reduced gradient could avoid the need for ropes or extensive stone steps, while ensuring safe and sustainable public access to the cliffs. A rerouted trail could potentially link to other Debsconeag Backcountry trails.</p> <ul style="list-style-type: none"> • As recommended above in relation to hiking trails to brook trout fisheries, the Bureau will work to establish a formal partnership arrangement with the commercial interests on the Unit to ensure all trails are properly located, authorized, and maintained as public trails.
<p><u>Loop Trails for Hiking and Backpacking</u> There is an interest in additional loop trails within the Unit, for those wishing to take an extended overnight backpacking trip and return to their vehicle without the need for a shuttle. There is an opportunity for the Bureau to effectively use partnerships with adjacent landowners and more broadly within the “100-Mile Wilderness” region in trail development and maintenance on the Nahmakanta Unit.</p>	<ul style="list-style-type: none"> • The Bureau should explore, with the abutting neighbor to the north, The Nature Conservancy, working on a <i>Rainbow Loop Trail</i> that would travel north from Debsconeag Backcountry Trail via the Appalachian Trail to Rainbow Lake, then travel south on a new trail segment to meet the Debsconeag Backcountry Trail near Stink Pond. • The Bureau should continue to develop, within the Unit, the <i>Great Circle Trail</i>, ultimately connecting the existing loop trails at Turtle Ridge to the Debsconeag Backcountry trails. Completing the loop requires resuming trail construction at the new Female Brook bridge, proceeding south to Wadleigh Mtn., and connecting Wadleigh Mtn. to Penobscot Pond Road. A short connector trail from the Debsconeag Backcountry east trailhead to the A.T. at Nahmakanta Stream would also be required. • These new trail segments would be A.T. side trails; therefore, the Bureau would also coordinate with NPS, ATC and MATC on development of the <i>Rainbow Loop Trail</i> concept and <i>Great Circle Trail</i> connector.

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	<p><i>(Appendix F provides additional details on potential new hiking trails and trail segments that have been preliminarily discussed during development of this Plan.)</i></p>
<p><u>Backpacking Campsites</u> There are no campsites on the 12 miles of Debsconeag Backcountry Trails to allow overnight backpacking. As loop trails are completed and connected, the demand for these campsites will grow, especially along the Debsconeag Backcountry and Turtle Ridge loops. Additional backpacking opportunities could be created in combination with the A.T. and other trails in the TNC Debsconeag Lakes Wilderness Area.</p>	<ul style="list-style-type: none"> • Consider development of 3 to 5 new backpacking campsites within the Unit, with priority given to sites on the Debsconeag Backcountry and Turtle Ridge loops. Consideration will also be given to sites that could be developed in conjunction with new Great Circle Trail segments. • Work with abutting neighbors, AMC, TNC and NPS, in exploring a coordinated proposal for backcountry trail connections and campsites along the Debsconeag Backcountry trail, the Great Circle trail, and trail systems outside of the Unit. Develop as resources allow and as demand is evidenced.
<p><u>New and/or Improved Hike-to and Water Access Campsites</u> Certain campsite development recommended in the 1995 Plan has not been pursued, to date, due to other priorities elsewhere in the Unit. However, there is an interest in developing additional campsites and improving existing campsites to reduce conflicting uses, especially where camping, parking, and boat launching sites occur in close proximity.</p>	<ul style="list-style-type: none"> • Re-examine water-access and accessible hike-to campsite development recommendations in the 1995 Plan and develop a priorities list and schedule for development or improvements of campsites, while providing public needs, environmental protection and aesthetics. Where possible, all accessible sites should be pre-authorized by the Maine Forest Service for campfires. • Consider campsite developments at the following locations: a hike-to campsite either at Sing Sing or Rabbit Ponds; a hike-to/water access campsite at Long Pond or Henderson Pond; a hike to and ATV and snowmobile-accessible group campsite at the former, now demolished Wadleigh Pond Sporting Camps site; a hike-to/water access campsite at the east shore of Pollywog Pond which would replace an existing campsite at Pollywog Stream Outlet. (Some of these sites may potentially serve a dual purpose as backpacking campsites,

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	addressed in the preceding recommendations.)
<p><u>Trailhead Improvement</u> Recently built trails and proposed trails and campsites would benefit from modest enlargement of existing trailheads.</p>	<ul style="list-style-type: none"> • Expand the parking and turn-around area at the Wadleigh Pond Outlet Trailhead to serve the new ATV/snowmobile trail along the Black Pond Road, the hiking trail to the proposed group campsite at Wadleigh Pond (discussed above), the proposed Wadleigh Mountain trail, and the new section of the Great Circle Trail on the east side of Pollywog Pond. • Enlarge the existing parking area at the trailhead at Pollywog Pond, east of the outlet of Pollywog Stream, for those using the water access campsites on Pollywog Pond or hiking the new section of the Great Circle Trail to Crescent Pond, a small and popular waterbody which is located in the A.T. Corridor, or Wadleigh Pond. • Develop a parking area along Penobscot Pond Road at the Great Circle Trail crossing to serve the new and proposed trail sections. • Modify the Turtle Ridge trailhead (west end) to clearly indicate where the trail starts. <p><i>Additional details on proposed enlargements of and new trailhead parking areas are provided in Appendix F.</i></p>
<p><u>Chesuncook Lake “bootleg” Snowmobile Trail</u> There is an unauthorized “bootleg” trail originating from Chesuncook Lake that crosses over the Unit’s north boundary line into T1 R12 WELS and ends at Black Pond Road near Little Female Pond.</p>	<ul style="list-style-type: none"> • Authorize the use of the trail as a primitive snowmobile trail but prohibit widening or grooming. The Bureau is considering converting the trail to a management road to connect to a management road on abutting private forest lands managed by Prentiss and Carlisle. • The Bureau will work with NLC and other users of this trail to develop warning signs and other means of addressing conflicts and safety concerns arising from use of this trail by both high speed and slower snowmobiles and by dog sleds.

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<p><u>Wadleigh Stream Crossing</u> During periods of high outflow, which most often occur in late winter and spring, Wadleigh Stream at the Wadleigh Pond outlet frequently bypasses the existing bridge on the east side, creating an intimidating water crossing for snowmobilers, ATV riders, and hikers.</p>	<ul style="list-style-type: none"> • Extend the existing bridge over Wadleigh Stream at the outlet to allow snowmobiles, ATVs and hikers to safely access the bridge during periods of high water, while preserving an adequate cross-sectional area for flood stage flows.
<p><u>Bypass Snowmobile Trail</u> The stretch of trail beginning at the intersection of the Jo Mary Road and Penobscot Pond Road and ending at Penobscot Brook Road is complete. The second leg of the bypass trail from Penobscot Brook Road to ITS 85/86 has not been completed. The bypass would serve to re-route snowmobile traffic off the Penobscot Pond Road while the road is used in winter by logging trucks and related equipment for timber management operations.</p>	<ul style="list-style-type: none"> • Explore opportunities that may be available for completing construction of the Penobscot Pond Road bypass snowmobile trail especially when logging operations equipment will be in the locale that could assist in cutting the remainder of the trail.
<p><u>ATV Unloading/Loading and Parking Zone near Henderson Checkpoint</u> Access to the Nahmakanta Unit from the south through the KI-Jo Mary system requires that ATVs be transported via a truck or trailer. A “trailhead” for ATVs is needed near the entry point through the Henderson Brook Checkpoint.</p>	<ul style="list-style-type: none"> • Explore opportunities for amenities to accommodate ATVs that are trailered in and out of the Unit at the southeastern corner. As ATV’s are not allowed on the first mile of the Jo Mary Road on the unit, the most appropriate site may be the gravel pit parking area near the Turtle Ridge trailhead.
<p><u>Rock Climbing Activities</u> There is sporadic rock climbing taking place on the Debsconeag Cliffs where peregrine falcons were hacked in 1996. Such activities could have an impact on any future nesting peregrine falcons. There is potential rock climbing at Turtle Ridge. The 2000 Integrated Resource Policy requires “special use permits” for rock climbing activities in the Unit.</p>	<ul style="list-style-type: none"> • Consult with the MDIFW and the Maine Natural Areas Program to determine whether rock climbing at Debsconeag Cliffs is having a detrimental impact on potential nesting activity for the peregrine falcon, or any other sensitive natural resources. Consider restrictions on rock climbing activities such as closing off the area during nesting season. Take similar measures to ensure protection of sensitive wildlife or natural resources, if necessary, at Turtle Ridge.
<p><u>Boating Facilities</u> Facilities on Fourth Debsconeag Lake and Wadleigh Pond require modest redesign and parking expansion to improve functionality and safety.</p>	<ul style="list-style-type: none"> • Redesign the existing launch facility at Fourth Debsconeag Lake to create safer landings for boaters. Consult with the Bureau’s boating facilities program on design suggestions for a more gradual

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	<p>landing to the lake. Redesign and relocate parking facilities to reduce congestion and portions of the access road to create better traffic circulation.</p> <ul style="list-style-type: none"> • Expand the parking areas at the existing hand-carry launch facility at Wadleigh Pond (North) to accommodate parking for up to three vehicles.
<p>An existing non-trailer (hand carry) boating facility allows users to load and unload boats and dunnage 400 feet from the Nahmakanta Lake. A wheeled cart is provided to assist in carrying boats and gear to the lakeshore. Parking accommodations are located on the Nahmakanta Stream Road near the put-in site. There is interest in having this site modified to allow a trailered boat launch.</p> <p>A related concern is the distance of the parking area from where boats and gear are unloaded. Boaters are required to walk a fourth of a mile back to the boat access after parking their vehicle in the designated area.</p>	<ul style="list-style-type: none"> • The National Park Service owns the land surrounding Nahmakanta Lake and the BPL manages it in accordance with an MOU with the NPS. In response to BPLs recent request for consideration of a trailered boat access across NPS lands, NPS has re-iterated its policy, as established in the MOU, that facilitates non-trailer (hand carry) boat launching only within Appalachian Trail Corridor at the south end of Nahmakanta Lake. The Bureau accepts the NPS decision on this issue. A trailered boat launch would entail a new motorized crossing of the A.T. and NPS policy is to limit additional motorized crossings. • The Bureau will reestablish and mark the cutoff trail between the boat access parking area and the lakeshore that shortens boater’s walk to and from the parking area.
<p><i>Administrative Considerations</i></p>	
<p><u>Abandoned Wadleigh Mountain Fire Tower</u> The 1995 Plan identified the abandoned and dilapidated former Maine Forest Service fire watchtower as a safety issue. Steps have been taken to deter the public from climbing the structure, yet the tower remains decrepit and continues to pose a safety issue.</p>	<ul style="list-style-type: none"> • The Bureau will address the public safety hazard by developing a plan and schedule to either remove the tower or restore it for observing the landscape. The Bureau will evaluate and respond to the Friends of Wadleigh group’s proposal for restoration of the tower.
<p><u>Signage</u> Numerous concerns have been expressed to the Bureau that signage is confusing and that users have difficulty finding their way around the unit. Additional and improved signage (directional, cautionary, informational) is needed throughout the</p>	<ul style="list-style-type: none"> • The Bureau will conduct an inventory of existing signage on the Unit and will develop a comprehensive sign plan, which will include a work plan and schedule for erecting and maintaining signs, and minimizing damage or loss of signs, keeping in mind the remote feeling

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<p>roads and trails in the Unit.</p>	<p>of the landscape, which could be diminished by too much signage. Signage priorities include road name, trail intersection, A.T. corridor, and ecological reserve boundary signs.</p> <ul style="list-style-type: none"> • The Bureau will work with various user groups and interests in developing its signage plan, including local snowmobile/ATV clubs, sporting camps operators, tourism organizations, MATC and the National Park Service. As time and resources allow, the Bureau will also explore establishing an interactive map using Geographic Information System capacity.
<p><u>Boat Storage</u> In 2012, the Bureau conducted an inventory of private boats at 20 of the ponds and deadwaters within the Unit and documented over 60 stored boats. The practice of storing boats on ponds and deadwaters needs improved oversight and management as there has been a proliferation in the number of boats and abandoned/unregistered boats, and this detracts from the backcountry experience at the ponds. The 2000 Integrated Resource Policy contains policies that identify waterbodies suitable for storage and measures to regulate boat storage use, such as storing boats at least 25 feet from shoreline and designated trails.</p>	<ul style="list-style-type: none"> • The Bureau will develop a plan for allowing boat storage on certain backcountry ponds in the Unit. The Plan should be clear, convenient for users, and enforceable. Once a plan is in place, actions will be taken to inform boat owners of the plan and boat storage policy and how the Bureau plans to implement it. The Bureau is aware that the number of boats stored may need to be reduced at certain sites that may be overused given the size of the waterbody.
<p><u>2008 Memorandum of Understanding (MOU) between National Park Service and the Bureau</u> Every 10 years, the Bureau and the National Park Service (NPS) sign a Memorandum of Understanding (MOU) relating to the management of the NPS corridor lands through the Nahmakanta Public Lands. The current MOU dated for March 28, 2008, is designed to “<i>establish management practices to allow the continuation of appropriate traditional uses of Nahmakanta Lake while also preserving an environment harmonious</i></p>	<ul style="list-style-type: none"> • The Bureau will continue its recreation management responsibilities of these facilities described in the 2008 MOU (including compliance with signage requirements) and work with the NPS and MATC in updating the MOU by 2018.

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<p><i>with the use of the Property as a National Scenic Trail.”</i></p>	
<p><u>Maine Appalachian Trail Club (MATC) Plan for the Appalachian Trail Corridor</u> The Maine Appalachian Trail Club’s (MATC) “<i>Plan for Management of Nahmakanta Lake Lands,</i>” revised in 2012, describes general management policies for all A.T. corridor lands in Maine, and specifies the Bureau’s recreation management responsibilities on the Nahmakanta Corridor.</p>	<ul style="list-style-type: none"> • Continue management responsibilities for these crossings, boating and camping facilities. Consult with the NPS and MATC on any necessary improvements to these facilities with the goal of ensuring facility improvement and development does not interfere with A.T. hikers’ experience. Address the need for expansion of parking at the A.T. crossing of Wadleigh Pond Road, to serve day hikers on the A.T. and eliminate parking in the roadway.
<p><u>Helivac Sites</u> Visitor safety at the Nahmakanta Unit could be enhanced by the identification and clearing, if necessary, of helicopter landing sites to allow quick evacuation of people who are severely injured or experiencing a medical emergency. Potentially, two to three sites could be cleared and marked, as recommended by Lifeflight, the organization that provides this service.</p>	<ul style="list-style-type: none"> • The Bureau should identify two to three potential helivac sites that are consistent with resource allocations and as determined based on site considerations such as accessibility.
<p><u>Chewonki Camp Parking</u> Parking at the end of Fourth Debsconeag Road for Chewonki staff and guests is inadequate and conflicts at times with public use and parking at the boat access site.</p>	<ul style="list-style-type: none"> • The Bureau will work with the Chewonki Foundation to develop parking for camp staff and guests just beyond and north of the existing parking at the end of the road, with an 8 vehicle capacity. The Bureau will also consider developing a parking area south of Fourth Debsconeag Road at the site of an old log yard, to serve as overflow for Chewonki and for the general public using the Fourth Debsconeag boat access and the Debsconeag Backcountry trailhead.
<p><i>Timber Management</i></p>	
<p><u>Deer Wintering Areas</u> There’s an ongoing interest between the Bureau and MDIFW to increase the modest acreage identified as deer wintering habitat on the Unit.</p>	<ul style="list-style-type: none"> • Continue management initiatives to maintain and develop softwoods for winter cover, and where the sites are suitable, increase the size of the habitat as is being done currently at the Black Pond DWA.

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<p><u>Future Management Guidelines</u> Management of timberlands demonstrates exemplary multiple use and sustainable forest management producing high quality saw logs and managing with the objective of maintaining large areas of late successional character. Timber management guidelines outlined in this Plan reflect current best practices geared to current conditions, which may change over time. These recommendations are provided to enhance the public’s understanding of how the Bureau will manage timber resources on the Nahmakanta Unit. These recommendations are not a “prescription” – only general guidelines.</p>	<ul style="list-style-type: none">• The Bureau will continue to manage the forest land with the objective of maintaining large areas of late successional forest. <i>Certain fire skips have been set aside during the current harvest cycle to further this objective.</i> Where timber management is the dominant use or is included among secondary uses, its management should favor high value and longer lived species of spruce, sugar maple, yellow birch, pine and hemlock for timber quality and wildlife habitat, and retain oak. The objectives will include growing high value timber products, chiefly saw logs and veneer, while maintaining visual integrity and enhancing the diversity of wildlife habitat.• Softwoods will typically be managed with spruce being a key species, pine being favored, and fir being valued but short-lived. Mixedwood stands created by past softwood harvests and the fire-origin mixedwood stands should be managed to encourage softwood types to regenerate. Natural spruce-hardwoods and the more fertile harvest-created mixedwood generally should be kept in mixedwood, favoring spruce, pine, and the more valuable hardwood species. Hardwoods in the fire-origin, shade intolerant stands should be managed for aspen and birch while retaining selected large trees, almost always aspen or spruce, for stand structure. Areas where aspen sprout heavily following a harvest should be managed for regeneration, unless limited soil fertility makes reversion to softwoods more desirable. In Northern hardwood stands, the objective should be to continue improving the overall stem quality, generally through selection harvests and favoring sugar maple, yellow birch, spruce, ash, and any oak or pine.
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<i>Transportation</i>	
<p><u>Connection of Black Pond Road to Abutter to North and to Wadleigh Pond Road</u> The Bureau has explored a connection of Black Pond Road to abutting ownership to the north of the Unit. In conjunction with this proposal, the Bureau has also considered extending Black Pond Road to connect to Wadleigh Pond Road, and replacing the Wadleigh Pond outlet bridge to allow use by haul trucks. In combination, these proposals would create a north/south haul route for timber products that would link to the private road system to the north and would facilitate moving timber products on the unit either north or south to reach appropriate markets. The connection to the north requires an agreement with the abutting landowner for use of their management road connecting to the Golden Road. However, the landowner is not interested in pursuing this road project at the present time. The Black Pond Road extension and Wadleigh Pond outlet bridge replacement could be implemented as a stand-alone project to benefit timber management in the Unit.</p>	<ul style="list-style-type: none"> • If the abutter’s interest in a connection of their management road to the Black Pond Road changes, the Bureau will pursue an agreement with the abutter and, if approved, will construct that half-mile connection. The Bureau will also further explore linking the Black Pond Road to the Wadleigh Pond Road, in combination with the northern connection or as a stand-alone project. The new route created by the combined projects may be interest to abutters both north and south of the unit, who could share in its maintenance as well as its use. An assessment of potential impacts to recreation, safety, wildlife and visual resources would be necessary, with actions identified to mitigate or minimize any impacts identified.
<p><u>Ratings and Information on Roads in the Unit</u> Informing motorists of 2WD access roads aids in awareness of safer travelling and the appropriate use of all types of roads.</p>	<ul style="list-style-type: none"> • Rate the use of roads for 2WD vehicles and provide this information to motorists. Ensure Plan maps and published maps distributed to the public are current, with all existing roads and road segments accurately located, named, and classified as to type of use.
<p><u>Smithtown Road</u> The Bureau and AMC, the abutting neighbor to the south of the Unit, have been discussing options for securing public vehicular access to the Unit from the west by way of the Smithtown Road (AKA Nahmakanta Road).</p>	<ul style="list-style-type: none"> • The Bureau will continue working with the AMC on this important access issue.

Seboeis Lake Unit

Character of the Landbase

The Seboeis Lake Public Lands Unit is comprised of approximately 21,369 acres surrounding the scenic and virtually undeveloped 4,900-acre Seboeis Lake, located between Millinocket and Brownville. Only a few camps can be seen along Seboeis Lake’s shoreline. Campers, boaters, anglers and wildlife watchers enjoy a large expanse of clear water studded by wooded islands with stunning views of Katahdin and the Chairback Range. The Unit encompasses nearly the entire Seboeis Lake shoreline¹⁰, all of Northwest Pond, the southwest shore of Endless Lake, and the whole shoreline of Turtle Pond. Seboeis Lake has a blend of motorized vehicle access and water access campsites, including sites on wooded islands with sandy beaches. ATV riders and snowmobilers use the “shared use road” system, which passes close to Seboeis and Endless Lakes — with the snowmobile trail connecting to other trails on the ITS system. The surrounding hills are gently rolling, and the shoreline of Seboeis Lake has a remarkable mix of rocky, boulder-strewn stretches interspersed with sand beaches and secluded coves. Abundant wetlands, extensive and varied natural plant communities, and productive fisheries support a diverse array of wildlife.

The Seboeis Lake Unit is at the southern point of the largest contiguous block of conservation of land in the state of Maine, over one-half million acres, including the Katahdin Forest Conservation Easement, Nahmakanta Public Lands, the AMC Roaches and Katahdin Ironworks conservation easements, Baxter State Park and the Allagash Wilderness Waterway. It lies midway between established Maine communities such as Brownville and Millinocket, gateway communities to the undeveloped forests and lakes to the north. The recreation opportunities here provide an easily accessible experience in the Maine North Woods.



Seboeis Lake view from a shoreline water-access campsite.

¹⁰ There are two small private inholdings along the lakeshore.

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Acquisition History

The Seboeis Unit also originated with two 1,000 acre lots in T4 R9 NWP and Lake View Plantation. Beginning in 1977 and throughout the years, a series of acquisitions from Oxford Paper Company; St. Regis Paper Company; Bayroot, LLC; Dyer Resources, Inc.; and Bigelow Timber Corporation resulted in the configuration of the Seboeis Unit that exists today.

New Fee Parcels

In April of 2012 the Bureau acquired 5,741 acres at the south end of Seboeis Lake and to the east of Seboeis Lake, adding to the Bureau's 15,628 acre Seboeis Public Reserved Lands Unit. The now 21,369-acre Unit protects 45 miles of Seboeis Lake shoreline. The tract was acquired from Bigelow Timber, Inc. with the assistance of the Trust for Public Land. Funding sources included Forest Legacy funds, Land for Maine's Future program, and the Bureau's federal Recreational Trails Program funds. The purchase brings into state ownership a key linkage in a regional system of snowmobile and ATV trails between Milo and Millinocket and includes important shoreland and associated wetlands. Designated as "Public Reserved Lands" by the BPL, the new parcels will continue to be managed for timber production, recreation and wildlife.

Natural Resources

The Maine Natural Areas Program (MNAP) completed a natural resources inventory of the Seboeis Unit for this Plan. The inventory is based on prior studies and reports and additional field work conducted by MNAP staff in 2010 and 2011 to revisit selected sites. Much of the following information was excerpted from this inventory (MNAP 2012b).

Geology and Soils

In contrast to the rugged Nahmakanta Unit, the topography of the Seboeis Lake Unit is gently rolling to level. Many of the features on the Unit's uplands may be attributed to its glacial geologic history. Bedrock consists of a combination of igneous rocks such as granite and quartz, and metamorphosed pelites, sandstones or dolostones. Surficial geologic features include ribbed moraine, till and esker deposits. Ribbed moraines are sub-glacial formations defined by short, small ridges of glacial deposits — usually till, but sometimes can be comprised of sand and gravel. Till is a sediment composed of unsorted clay, sand, gravel and rocks that blankets much of Maine. Eskers are deposits of sand and gravel from sub-glacial streams and rivers, and are usually deposited in linear patterns.

The Seboeis Lake Unit is generally characterized by the Brayton-Dixfield-Peacham soil association. These soils are derived from the weathering of glacial till and are typically classified as sandy loams. They are very deep, sometimes poorly drained, and very stony. In areas of glacial outwash (i.e., eskers and sand deposits in ribbed moraines) soils of the Masardis Series occur. This occasional soil formation is a very deep, excessively drained gravelly fine sandy loam.

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Hydrology and Water Quality

The Seboeis Lake Unit lies within the Penobscot River drainage. The 4,913-acre Seboeis Lake drains into 1,493-acre Endless Lake. A dam at the outlet stream of Seboeis Lake is owned and operated by the Bureau, and the water level of the lake may fluctuate by several feet over the course of the year. The Bureau hires a part-time “dam keeper” to maintain and operate the outlet dam, a service which is supported in part by voluntary donations from camp lot leaseholders. The dam keeper may raise the dam gate to allow more outflow during periods of high inflow (e.g., during the spring snowmelt) and thereby minimize shoreline flooding. He may lower the dam gate to reduce outflow during periods of low inflow (e.g., during mid to late summer) to minimize loss of surface area on the lake and maintain navigability of shallow areas.



Flow control gate at the Seboeis Lake Outlet Dam.

Recent water quality data are not available for Seboeis Lake. However, in the *Maine Wildlands Lake Assessment*, Seboeis Lake is ranked “Class 1A”, earning a ‘significant’ or ‘outstanding’ rating in six out of seven categories—fisheries, wildlife, scenic, shoreland character, cultural resources, and physical features (Maine Department of Conservation 1987). Water quality monitoring data have been collected from Endless Lake since 1989. The information is very limited, but in summary the water quality of Endless Lake is considered to be above average based on measures of transparency, total phosphorus (TP), and chlorophylla (Chla) (LakesOfMaine.org 2012).

Wetlands

The Unit includes 2,740 acres of wetlands —13 percent of the Unit’s area, not including the lakes— according to the National Wetlands Inventory. Most of the wetlands (67 percent) are open rather than forested. The largest wetland complex on the Unit is a series of shrub-scrub wetlands and peatlands west of Northwest Pond that is collectively several hundred acres.

Many of the wetlands in the Unit have been modified from their natural state by past human activities. Unnatural disturbances to the area due to man-made structures include

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the dam at the outlet to Seboeis Lake, the old railroad grade west of the lake, and various smaller impoundments that have altered or expanded wetland communities and have flooded areas that were formerly emergent wetlands. For example, Shallow Pond near the inlet to Seboeis Lake was formerly an emergent wetland, and open shrub/scrub wetlands at the inlet to Northwest Pond were formerly cedar swamps.

The old railroad grade, a portion of which is now used by passenger vehicles, snowmobiles, and ATVs, is home to a small population of a non-native and invasive common reed (*Phragmites australis*) whose seeds were likely transported to the Unit by vehicle and established in a wet ditch along the old railbed. This population should be controlled before it enters larger open wetlands nearby.

Ecological Processes

Approximately 20 percent of the Unit's forest stands are spruce-fir types and spruce budworm has played a prominent role in some of these stands. Since balsam fir is the preferred food of the budworm, areas with large amounts of fir become easy targets. By preferentially selecting balsam fir as its host, spruce budworm effectively decreased the amount of quality fir in the area. The most recent outbreak occurred in the 1980's.

Beech is one of the most common hardwoods on the Unit, and many of the beech trees have been infected with the beech bark disease. This introduced forest pathogen results when the beech scale insects (*Cryptococcus fagisuga*) create wounds that are later infected by fungi (*Nectria spp.*), causing cankers to form. In badly infested stands, most mature trees are infected, causing significant mortality in forest canopies but not deterring regeneration. Many of the hardwood stands in the Unit and in the region show signs of beech bark disease, in particular sites on dry or poor soils lacking a healthy complement of maple and yellow birch.

The mature forested communities on the Unit show evidence of typical small gap disturbances from ice, windthrow, or natural tree mortality. These gaps increase the complexity of forest structure and add to the diversity of microhabitats in the forest for plants and animals.

Beaver frequent the streams on the east side of the Unit, particularly along Otter Brook and Roaring Brook. Beavers can have both a positive and a negative impact on the environment. When beavers build dams, they create new wetland environments for other species. These wetlands can help slow erosion, raise the water table, and help purify the water. Beavers can play a major role in succession. When beavers abandon their lodges and dams, aquatic plants take over the pond. Eventually, shrubs and other plants will grow, and the area will become a meadow. The shrubs in the meadow will provide enough shade to allow tree seedlings to grow. Once the trees grow, they will take over, and the land will turn into a woodland area.

Fisheries and Wildlife

The Seboeis Unit's waters sustain both cold and warm water species. Landlocked salmon, splake, white and yellow perch, smallmouth bass and chain pickerel are caught in

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Seboeis and Endless Lakes. Brook trout are found in Turtle Pond and several tributary streams that enter Seboeis Lake. A dam at the outlet prevents immigration of fish produced in the lower portions of the Seboeis River drainage. The Bureau operates the dam at Seboeis Lake to control water levels for recreation, fisheries and campsite development management. According to the MDIFW, fluctuations of the water level resulting from operation of the dam may reduce the production of shore-spawners. For example, if fish spawn during high water levels and subsequently the water levels drop their eggs may be exposed and die.

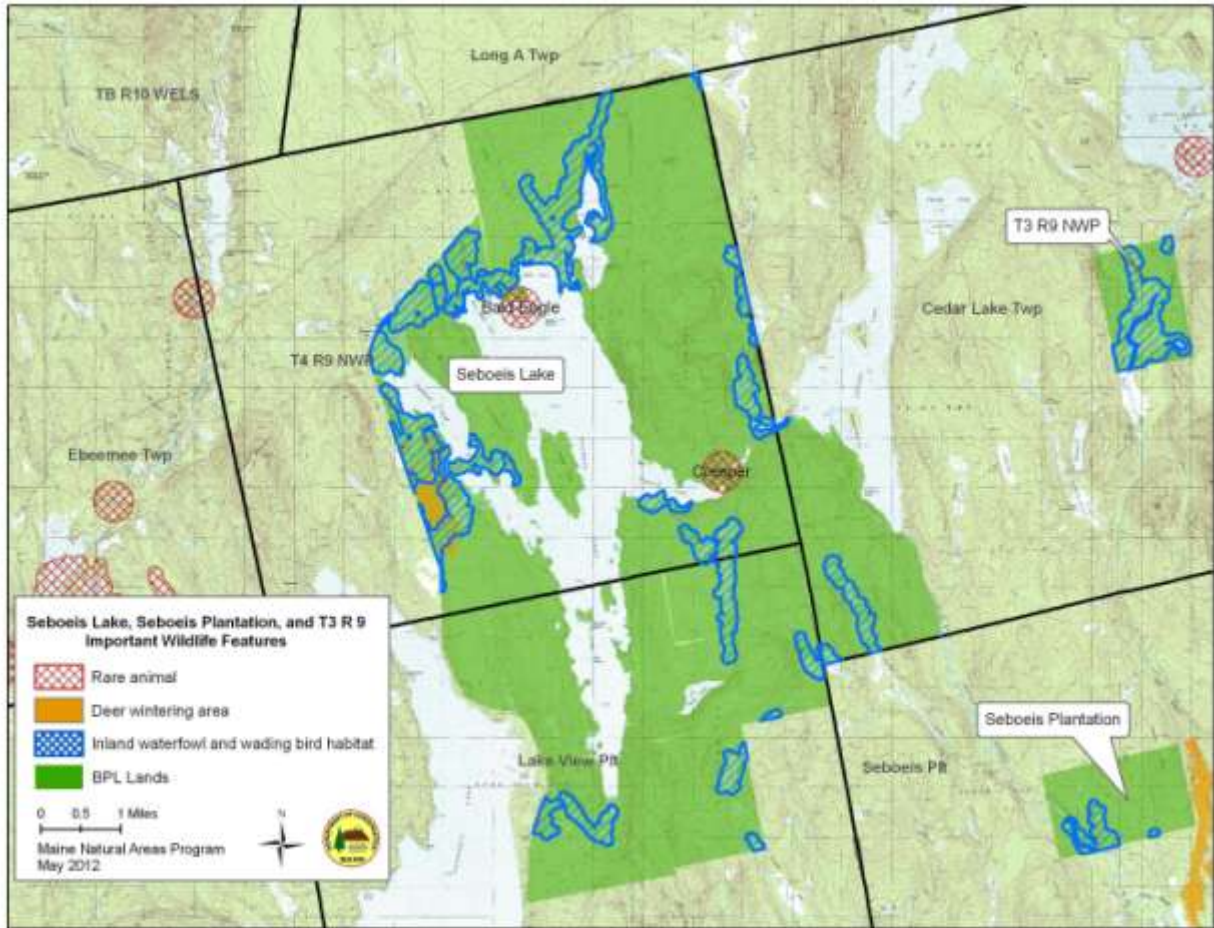
In fall, hunters use the Seboeis Lake Unit to harvest deer, moose, bear and waterfowl. The relative absence of closed canopy softwood cover may be somewhat limiting for deer. There is one mapped Deer Wintering Area (DWA) on the Unit, west of Northwest Pond on the west side of the Unit. However, much of this DWA was harvested a few years before the Northwest Pond addition was acquired in 2009, and is likely to require a period of time to be restored to deer wintering habitat.

Loons are particularly abundant, with surveys revealing counts from 25-29 individuals. Seboeis Lake actually has the highest population of loons for a Northern Maine lake except for Moosehead Lake.

Bald eagles, ospreys, belted kingfishers, mergansers and common terns all rely on the lake's fish as a vital food source. In 2011 the Bureau maintained 14 nest boxes in wetlands near the north end of Seboeis Lake, and 12 were used — some by tree swallows or other songbirds rather than ducks. There is also an active bald eagle nest on the northwest side of the lake. Bald eagle populations have recovered in Maine to the extent that they are no longer listed as rare, but MDIFW continues to monitor nesting sites.

Common wildlife species include the snowshoe hare, ruffed grouse, coyote, fox, beaver and otter. Northwest Pond is particularly noted for moose watching. The Unit contains several designated Inland Waterfowl and Wading Bird Habitats (IWWH) that together account for 2,825 acres of the Unit, primarily along the northern and western borders of Seboeis Lake and south of Seboeis Lake. The IWWH's on the Unit include both 'moderate' and 'high' value wetlands, as ranked by MDIFW.

No rare animal or plant species have been found in the Seboeis Lake Unit. Notable wildlife occurrences include bald eagles, as noted above, and a population of creeper, a freshwater mussel species, in the eastern end of the lake near the outlet. The creeper (*Strophitus undulatus*) is listed as a *Species of Special Concern* and inhabits cool, well oxygenated waters in Maine. It was last documented at this location in 1996, when just two individuals were found, and there have been no surveys for this species since that time. Sound riparian management, involving an intact forested buffer, is appropriate to maintain cool, clean, well oxygenated water in locations where the creeper occurs.



In spring 2012 twelve young stems of American chestnut (*Castanea dentata*) were found on Hammer Island. American chestnut is not listed as rare by the Maine Natural Areas Program, but it is uncommon in Maine — particularly this far north. Before the species was devastated a century ago by the chestnut blight, a fungal disease, it was one of the most important forest trees throughout its range. No mature live trees were found on the Unit, although there was one large dead chestnut snag.

Natural Communities

According to the Bureau’s forest stand type maps, the Seboeis Unit (excluding the 2012 addition at the south end of Seboeis Lake) supports mostly pole-sized forest stands, while seedling/sapling and saw timber sized stands are evenly split at approximately 15 percent each. This structure contrasts with the typical forest structure in Piscataquis County, which is somewhat younger —36 percent of the forest in Piscataquis County is in the seedling/sapling class (US Forest Service 2012). The newly acquired acreage at the south end of the lake was heavily harvested within the last 10 years and consists primarily of regenerating stands. While a number of older forest stands were identified on the Unit, no ‘old growth’ stands were found.

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The **Spruce – Fir - Northern Hardwoods Forest** is a coarse scale classification that describes most of the Unit’s upland forest. This ecosystem type is comprised of numerous upland hardwood and softwood natural communities that are typical to northern Maine and the central mountains. Spruce and fir typically occupy about 20 to 30 percent, with white pine, hemlock, sugar maple, yellow birch, red maple, and beech sharing dominance, and cedar frequent along lakeshores and waterways. Patches of softwood are more common on drier knolls and steep slopes, while sugar maple, white ash, and cedar dominate colluvial basins having more soil and moisture. Constituent natural communities found in the Unit include Aspen – Birch Forest, Lowland Spruce Fir Forest, Beech – Birch Maple Forest, Cold Air Talus Slope, Hemlock Forest, and Red Pine – White Pine Forest.

The **Aspen – Birch Forest Complex** is the most common early successional community in the region, and the Seboeis Lake Unit is no exception. This community occurs following fire or a timber harvesting and may occur as open-canopy woodland or as closed forest. Most of the examples of this community on the Unit are mid-aged and are in transition to other forest types, most commonly Lowland Spruce - Fir. Examples of this transition include many stands on Leyford Island, where large white pine (20-28” DBH) and big tooth aspen (12-16” DBH) form a super canopy, with red maple, spruce, cedar, and balsam fir regenerating in the understory. Trees here were aged at roughly 80 years old, and the charcoal in the soil suggests that this mature aspen and white pine stand originated from a fire in the early 1900s. There are also signs of past harvesting, estimated at 40 to 50 years ago based on stumps and growth patterns noted in tree cores.

The **Lowland Spruce Fir Forest** is the most common softwood forest type on the Unit, occupying low lying areas adjacent to streams and wetlands. Most of the observed examples appear to have burned around the turn of the last century and have since displaced aspen/birch forests. In addition, many areas of this community have been heavily harvested prior to state acquisition. The total canopy cover is approximately 70 percent to 80 percent and the total basal area is approximately 140 feet² per acre in communities that have not been recently harvested. Most trees are 10 inches to 15 inches in diameter, and mature trees that were cored in various stands were between 70 and 90 years old. The herbaceous layer is dominated by balsam fir and red spruce, and also includes bracken fern (*Pteridium aquilinum*), starflower (*Trientalis borealis*), red maple, creeping snowberry (*Gaultheria procumbens*), beech, white pine, and painted trillium (*Trillium undulatum*).

At wetter sites, the similar **Spruce-Fir Wet Flat** community occurs, and in some small areas next to open bogs, these wet flats have not been recently harvested. These areas contain a heterogeneous mix of red and black spruce, fir and cedar, with a 100 percent moss cover. Understory species include bunchberry (*Cornus canadensis*), creeping snowberry (*Gaultheria hispidula*), wintergreen (*Gaultheria procumbens*), sheep laurel (*Kalmia angustifolia*) and rattlesnake plantain (*Goodyera tessellata*).

One of the oldest and most intact sections of upland forest within the Unit lies between Otter Brook and the T3 R4 NWP township line. This forest is dominated by spruce, fir,

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and white pine, and is mature to late-successional, with many trees in the 14-18” diameter range and basal area roughly 120 square feet per acre. The most recent harvesting was a light selective cut over 30 years ago.

The **Beech – Birch – Maple Forest** occurs throughout the Unit, but is dominant on the slopes south and east of Seboeis Lake. Mature forest canopy closure is 80 percent, and basal area can be up to 130 ft² per acre. Dominant tree species include sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), white ash (*Fraxinus americana*), red spruce (*Picea rubens*), northern white cedar, and yellow birch (*Betula allaghaniensis*). These trees are primarily in the 10 inch to 16 inch range, with scattered legacy trees in the 20 inch to 25 inch range. At some richer sites, Christmas fern (*Polystichum acrostichoides*) is common in the understory, and orchids including the lesser purple fringed orchid (*Platanthera psycodes*) were found.

Two uncommon upland communities have been identified in the Unit - **Cold Air Talus Slope, and Red Pine-White Pine Forest**. East of Otter Brook there is a steep talus slope, the base of which hosts a small, approximately one acre Cold Air Talus Slope, a rare (S2) community type in Maine. This community type occurs only at the base of steep talus slopes, where cold air drainage creates a cold, boreal microclimate; ice can often be found beneath these boulders year-round. This community is very bouldery and has a dense carpet of lichens, sphagnum moss and feather moss. Trees are sparse, but there is a dense layer of shrubs and herbs, 95 percent cover overall, including Labrador tea (*Rhododendron groenlandicum*), velvetleaf blueberry (*Vaccinium myrtilloides*), creeping snowberry (*Galutheria hispidula*) and sheep laurel (*Kalmia angustifolia*). Treacherous four to eight foot clefts in the boulders are hidden by the mat of moss.

A glacial esker formation at the north end of Seboeis Lake, on either side of the Narrows, is host to a **Red Pine-White Pine Forest**, an uncommon (S3) community type in Maine. This mature forest is dominated by red pine 10 inches to 16 inches DBH, with a canopy cover of approximately 80 percent red pine and approximately 10 percent paper birch. The understory is dense and includes huckleberry (*Gaylussacia baccata*), with some bracken fern (*Pteridium aquilinum*), winterberry (*Gaultheria procumbens*) and wild raisin (*Viburnum nudum*). The basal area is 130 square feet per acre. A history of fire in this area is evident in that there are “fire scars” on trees, and fire is likely responsible for the dominance of red pine, which thrives in post-fire environments.



Numerous wetlands also occur in this forest, including both peatland and mineral soil natural communities. One of the more interesting peatlands is a kettlehole bog ecosystem just west of the boat launch at the Inlet. Kettlehole bogs form in depressions left by remnants of melting ice as glaciers retreated from the region over 10,000 years ago. Large chunks of ice were stranded and partially buried by glacial outwash, and formed depressions known as “kettles” when they finally melted (Bennet and Glasser 1997). These depressions typically have no inlet or outlet and host vegetation communities tolerant of highly acidic conditions.

At the Seboeis kettlehole bog, open water at the center of the bog is surrounded by distinct vegetation bands that increase in height away from the open water. The order and type of these bands radiating from the water begin with a 20 foot wide Sedge-Leatherleaf Fen Lawn, then a 15 foot band of Leatherleaf Boggy Fen, which grades into Sheep Laurel-Dwarf Shrub Bog, and end with a ring of Spruce Larch Forested Bog. Characteristic species in this ecosystem include small cranberry (*Vaccinium oxycoccus*), bog rosemary (*Andromeda glaucophylla*), cottongrass (*Eriophorum angustifolium*), Leatherleaf (*Chamaedaphne calyculata*), pitcher plant (*Sarracenia purpurea*), sheep laurel (*Kalmia angustifolia*), black spruce (*Picea mariana*) and huckleberry (*Gaylussacia baccata*).



Red pine forest at Seboeis Unit.



Kettlehole bog at Seboeis Unit.

Other, more extensive examples of various peatlands occur west of Northwest Pond and Seboeis Lake. Open peatlands here are dominated by heath shrubs, sedges, and scattered black spruce, with a thick cover of peat moss. Common species include cottongrass (*Eriophorum angustifolium*), leatherleaf (*Chamaedaphne calyculata*), bog rosemary (*Andromeda glaucophylla*), fewflower sedge (*Carex pauciflora*), pitcher plant (*Sarracenia purpurea*), and small cranberry (*Vaccinium oxycoccos*).

Many open peatlands at the Seboeis Lake Unit are interspersed with closed-canopy Spruce – Larch Forested Bog. In many areas, stunted black spruce trees are 10-15 feet tall. A dense shrub layer in these stands typically includes Labrador tea (*Rhododendron groenlandicum*), rhodora (*Rhododendron canadense*), lowbush blueberry (*Vaccinium angustifolium* and *V. myrtilloides*), highbush blueberry (*Vaccinium corymbosum*) and mountain holly (*Ilex mucronata*) and sparse herbaceous species including three-seeded sedge (*Carex trisperma* var. *billingsii*), boreal bog sedge and cottongrass.

At the north end of Seboeis Lake are several other notable natural communities. A Lakeshore Beach natural community occurs at Sand Cove, but like most natural lakefront beaches in Maine this community has been moderately affected by campers and campfires resulting in sparse vegetation including earth loosestrife (*Lysimachia terrestris*), Canada bluejoint (*Calamagrostis canadensis*), large cranberry (*Vaccinium macrocarpon*), spirea (*Spirea tomentosa*) and reed canarygrass (*Phalaris arundinacea*). Behind the beach is a Sweetgale Mixed Shrub Fen. Common plants here include sweetgale (*Myrica gale*), woollyfruit sedge (*Carex lasiocarpa*), spikerushes (*Eleocharis* sp.), leatherleaf (*Chamaedaphne calyculata*), star sedge (*Carex echinata*), large cranberry

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(*Vaccinium macrocarpon*), silvery sedge (*Carex canescens*), and cottongrass (*Eriophorum tenellum*).

Shallow waters on the Unit, especially in the northern arm of Seboeis Lake, feature extensive Waterlily-Aquatic Bed communities. The yellow pond-lily (*Nuphar variegatum*) population is dominant and associated with the small yellow pond-lily (*Nuphar microphylla*), little floating heart (*Nymphoides cordata*) and fragrant water-lily (*Nymphaea odorata*).

History and Cultural Resources

The Piscataquis River was a frequent route travelled by Native Americans from Moosehead Lake to the Penobscot River. The Piscataquis River, along with its tributaries—Seboeis Stream and Pleasant and Sebec Rivers—was known as ‘Piscataquis Ahwangan’ (Cook, 1985). Segments of this canoe network were used to access different parts of the north woods for hunting. Penobscot people would have been able to canoe north from their settlement on the Penobscot River, travel west on the Piscataquis River, then head north again on the Seboeis Stream to Endless Lake and then Seboeis Lake. Evidence of Native Americans camping at Seboeis Lake has been recorded by the Maine Historic Preservation Commission. Prehistoric sites have been located on Hammer Island and Dollar Island—on an esker which runs through Seboeis Lake. Further archeological investigation is recommended at Dollar Island, particularly if water levels are lowered. The dam on Seboeis Lake may have flooded some potential prehistoric sites, such as along the original outlet stream of Northwest Pond (which, before the Seboeis Dam, was connected to Seboeis Lake by a narrow outlet stream) (Lahti and Spiess, 2011).

Recreation Resources

The Seboeis Lake Unit is known for its ideal camping and picnicking opportunities and popular boating featuring views of Katahdin and the Barren – Chairback Range. A vital multi-use trail for snowmobiles and ATVs within the Unit guarantees public access which links the Brownville area to the Jo-Mary region and north to the Millinocket area. Seboeis Lake supports both excellent warm and coldwater fisheries and its ice fishing is extremely popular. The Unit is used for deer and bear hunting, trapping, and wildlife watching. The camping opportunities offered on this unit range from primitive camping at water-access sites to a stay at a traditional sporting camp. The Seboeis Infrastructure map on page 109 depicts the locations of the recreation facilities on the unit.

Camping

Camping is a popular activity on the Seboeis Lake Unit and provides campers with a sense of remoteness and variety of scenic experiences. There are a total of 14 primitive campsites dispersed along the shorelines of Seboeis and Endless Lakes, with some located on wooded islands with sandy beaches on Seboeis Lake. Six of the shoreline sites are accessible by vehicle, with one involving a short walk, while the other sites can be accessed by boat. The boat access sites are concentrated in two areas of Seboeis Lake; around the mouth of the Inlet at the north end of the lake, and at Hammer Island and two other sites on the south end of the lake. The most popular drive-to sites are those adjacent to the boat landing at the north end of the lake. The five campsites at the Inlet of

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Seboeis Lake are the most popular water-access sites. Large boating groups often use the Hammer Island site during the summer. Two additional drive-to sites are available at The Pit, a former gravel pit near the Seboeis Lake boat landing. Fire permits are not required at any of the campsites.



Shoreline water-access campsite at the Sand Cove area of Seboeis Lake.



Water-access campsite on Hammer Island at Seboeis Lake.

The table below summarizes the existing campsites on the Seboeis Lake Unit.

Seboeis Lake Unit Campsites				
Name	# of Sites	Type of Access (See key below)	Fire Permit Required	Comments
The Pit	2	D	N	Close to boat launch facility, can accommodate additional campers during high use periods
Boat Landing	2	D	N	
The Inlet – North	1	W	N	
The Inlet - Middle	1	W	N	
The Inlet – South	1	W	N	
Sand Cove	2	W	N	
Seboeis Outlet	1	D	N	Short walk in downstream from Seboeis dam
Hammer Island	1	W	N	Large group site with user-created improvements (e.g., pole shelter)
Burn Island	1	W	N	
Turtle Outlet	1	W	N	
Endless Lake Outlet	3	D	N	Located on each side of boat launch facility
Total Sites	16			

Key: D = Drive-to, W = Water Access

In addition, visitors can chose to stay at a traditional sporting camp: a commercial camp, Cole’s Moosehorn Cabins, operates on a leased lot situated on the west shoreline of

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Northwest Pond. The camp is accessed from the west via four miles of gravel road, the last portion of which follows the abandoned railroad bed (now referred to as Railroad Bed Road) that forms much of the west boundary of the Unit.



Gravel pit campsite at Seboeis Lake.



Shoreline campsite adjacent to Seboeis Lake boat ramp.

Boating

There is a cement trailered boat ramp at the north end of Seboeis Lake that can be accessed by a road that travels south from Route 11. This ramp is critical to recreational access in the Unit, as fishing, recreational boating and water-access camping are the cornerstones of the public experience here. Many are launching boats for fishing, but some use the lake for sightseeing and wildlife watching. There is another, smaller gravel trailered boat ramp at the south end of Endless Lake. There is an unimproved facility near the south end of Seboeis Lake, on the newly acquired east shore lands, that may be suited for carry-in boat access with minor improvements. An old forest management road leads to the site.



Kayaker on Northwest Pond.



Trailer boat ramp at Seboeis Lake.

All-Terrain Vehicle (ATV) Riding

ATV riders can enjoy 18 miles of designated trail that follows all of the shared-use roads within the Seboeis Lake Unit. Following the acquisition of the southern-most parcel early in 2012, the Bureau, other landowners, local clubs, and businesses worked together to create a nearly 50-mile long trail, including the 18 miles within the Unit, connecting Millinocket and the Katahdin Forest region to Brownville/Milo and to the ATV trail network south of the Unit.

[INSERT 11 X 17 SEBOEIS REC INFRASTRUCTURE MAP]

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(Back side of 11 x17 Seboeis Infrastructure map)

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Snowmobiling

Part of the Unit's shared use road network is also incorporated into the ITS system. ITS 82/83 crosses the east boundary of the Unit at the south end of Endless Lake, turning south off the road soon after and then exiting the unit. The route eventually turns west again and re-enters the public lands, after which it crosses the south end of the unit, primarily following the shared use road. Approximately four miles of ITS 82/83 traverses the Unit. This important route connects Milo to East Millinocket (southwest and northeast of the Unit, respectively), and also connects to ITS 82 from Lincoln (southeast of the Unit). ITS 111 leaves ITS 82/83 near the southwest corner of the Unit and travels along the old railbed at the western edge (but outside) of the Unit for about eight miles, before turning west and then north again to connect to Jo Mary trails and beyond to the Nahmakanta Unit. This connector trail links two major north-south snowmobile routes between Brownville and the Millinocket area. ITS 82/83 and 111 are maintained through a grant to the Town of Milo passed to the Devil Sledders club.

All of the shared use roads within the unit, including the portions that are not part of the ITS trail system, are open to snowmobiles when not being used (and therefore plowed) for forest management. These roads are not groomed for snowmobile use.

Fishing and Hunting

The Seboeis Lake Unit is a favorite destination for fishermen throughout the year, providing both cold water and warm water species. Landlocked salmon, splake, white and yellow perch, small mouth bass and chain pickerel are caught in Seboeis and Endless Lakes. Ice fishing is popular on Seboeis Lake. Brook trout are found in Turtle Pond, a LUPC-zoned Remote Pond with an outstanding coldwater fishery, and several tributary streams that enter the Unit. In fall, hunters frequent the Unit in search of deer, moose, bear and waterfowl.

Timber Resources

Harvest History

Timber harvesting records for the unit date back to the early 1900's, and for most of the last century, until state acquisition of the majority of the Unit in 1977, the land was owned and managed by forest products companies. Mills were historically located at the outlets of both Endless and Seboeis lakes. Since state acquisition, Bureau foresters have sustainably managed the forest to accrue standing volume. Approximately, 5,700 acres around the south end of Seboeis Lake were heavily harvested within the last ten years, prior to its acquisition in 2012.

The eastern half of T4 R9 NWP was harvested two or three times between 1900 and the time of state acquisition. This reduced the softwood component and lowered average quality, while fragmenting many stands and establishing abundant regeneration on most acres. The lands in Lake View Plantation have a somewhat similar harvest history. Most of the 2,300 acres of forest in T3 R9 NWP was clearcut circa 1980, resulting in hardwood/mixedwood regeneration of decent quality and species mix, with some taller/older residuals in riparian buffers, especially along Endless Lake. Northwest Pond

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experienced heavy harvesting between 2005 and 2007, immediately prior to state acquisition with riparian areas cut more lightly.

Harvesting in the Unit under Bureau management began in 1989 starting at the northern end. Operations worked their way south to Lake View Plantation, though much of the Turtle Pond area was accessed from south of the Unit. These harvests were mainly selection and improvement harvests, plus some overstory removal patches in the most fragmented stands, and yielded some 56,000 cords, nearly two-thirds of which was hardwood pulp. In 1991 a designated beech research area on a beech-rich low hilltop east of Seboeis Lake was harvested with objective of being preferential to a culture of beech which is genetically resistant to beech bark disease. The treatments within these areas included six 10-acre blocks of selection harvest, and another six 10-acre blocks of clearing all of the trees, with any smooth-barked (thus likely to be resistant) beech retained in both treatments. Another three such blocks were untreated, and served as controls. Results of the research indicated some increase in the proportion of beech resistant to the beech bark disease. From 2004 through 2006 some modest “second entries” were done, often treating areas bypassed during the first round, and in 2007 the west shore of Seboeis Lake had a selection harvest. More second entry harvests began in 2010, and the total Bureau harvests on the Unit at 77,000 cords, with 70 percent being hardwoods while the overall stocking is more than half softwoods.

Approximately 80 percent of the forest area in the South Seboeis tract has been heavily cut or clearcut since the mid-1990s. Riparian buffers were partially harvested during that period and hold better stocking, but overall this is a young forest, dominated by saplings. Much of the land held hardwood and mixedwood stands prior to these recent harvests, and the abundant regeneration looks to be hardwood and mixedwood types. The latest harvest in the acquired Southern Seboeis tract took place in 2004-2005. Recent harvests included 19 acre clearcuts/overstory removal harvests.

Current Conditions

Softwood type covers about 2,900 acres or 25 percent of the regulated forest and is comprised of 36 percent spruce, 23 percent cedar, 13 percent red maple, 10 percent pine, 8 percent fir, and 6 percent hemlock. The pine and spruce are usually of good quality, and fir quality is good on younger stems and declining on older ones. Cedar is poor quality and red maple is generally not good. Hemlock is usually fair to good, except for the larger trees which are often rough and defective. Softwood stands are generally well stocked, holding 25-30 cords per acre. Some of the most challenging terrain is on softwood sites.

Mixedwood type is found on 35 percent of regulated forest and on all types of sites, from the wettest to the best drained. Spruce is the dominant species with 26 percent of type volume, followed by red maple with 17 percent, cedar and fir with 10 percent each, yellow birch and pine with 7 percent each. Along with the variety of sites, this type has the widest diversity of species mixes and qualities, the most horizontal diversity within stands, and most likely the most frequent historical harvest entries. Current stocking averages slightly over 20 cords per acre, with considerable variation. Spruce is found on almost all acres and occasionally in thick pockets, usually with hemlock, fir, and pine.

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Fir is present throughout the type, if not in the overstory then as a significant part of the abundant regeneration. Pine, almost all white, may be a scattered superstory of large trees, or a minor component of the main canopy level. Some areas of mostly hardwoods hold poor quality red maple and beech, some good quality birches and maples, and aspen above fir-heavy mixedwood saplings.

Hardwood type is the most common type of forest on the Unit, occupying 40 percent of regulated forest. Beech is the leading species with 22 percent of type volume, and most of it is heavily infected with beech bark disease. The species has also suffered from several other insect outbreaks in recent decades, and the average quality of these trees is low. Red maple is at 19 percent of type volume. On fertile ground this is sometimes the best quality species, while in some places it is a low quality residual of long-past high grade harvests on sites of limited fertility. Yellow birch makes up 11 percent of type volume, and is fair to very good in quality. Aspen and spruce makes up nine percent of the type volume and is mostly of good quality stems. The hardwood type volume also holds five percent, each, of ash and sugar maple, both tending toward good quality. Average volume for hardwood types is 17 to 18 cords per acre, lower than on other types, mostly due to extensive sapling stands on T3 R9 NWP.

The South Seboeis tract contains sites and topography similar to that of the rest of Unit. The volumes of each forest type are not represented in the preceding paragraphs. However, the majority of these acres are hardwood ridges that have been high graded several times in the last century. The majority of the understory remaining in these stands has a very high percentage of diseased beech. The overall standing timber inventories are low, 11-13 cords/acre from a Prentiss and Carlisle inventory conducted prior to the State's purchase.

Future Forest Management

The land is mainly low hills surrounding the lake, with moderate slopes (some isolated steep areas), and deep soils with drainage ranging from very poor to well drained. Most soils have medium to high fertility, and except for wet areas requiring frozen ground operations, only a small portion of the Unit's acres have much in the way of timber management limitations.

Bureau management over time has provided taller, older trees than that of the surrounding landscape, and this practice should continue in recognition of this situation. For the period covered by this plan, the major activity in the newly acquired lands in the southern end of the Unit will be to assess the species mix of the saplings, and the feasible opportunities to improve the value and quality of that mix. In most places softwood regeneration should be preferred, especially spruce, pine and hemlock. The more desirable hardwoods are sugar maple, yellow birch, white ash, and paper birch, plus well-formed examples of other species. Any oak should be favored. Access is in place although the condition of the branch roads will need to be appraised prior to any timber management activity.

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Softwood type management practices will maintain the spruce component, and maintain or increase the pine, with fir as an intermediate product. Hardwoods retained for diversity should be those found on the better microsites when feasible, and red maple should be kept at or below current stocking. Little harvesting is anticipated in the near future where cedar is the dominant species.

On *mixedwood sites* the acre-by-acre diversity makes specific prescriptions challenging, but as a general rule, spruce and pine are the favored species, with quality hardwoods also favored when found on the more fertile sites. Where deer winter cover is desired, hemlock becomes more important to favor.

Hardwood types have an abundance of low quality beech which aggressively regenerates from root suckers, posing a challenge for improving the overall quality of the sites. However, in most Bureau harvests in hardwood types, all clean-barked beech should be retained. The exceptions might be small patch cuts intended to establish higher proportions of maple, birch, and ash. Well-formed stems of all species present should be favored where practical, and spruce and pine should be favored when encountered.

Transportation Considerations

Road Access to the Unit

Most visitors enter the Unit from the north using Route 11. From Route 11, motorists travel a short distance on a graveled road (West Seboeis Road) across land owned by Katahdin Forest Land, LLC, and cross an active rail line before coming to the Unit's boundary line. The Bureau maintains the access road from the railroad crossing to the Unit boundary, but there is no deeded public access on this segment of private road.

Route 11 is also used to get to the Unit from the south. Visitors coming from this direction travel through the village of Lake View on the south end of neighboring Schoodic Lake and head north on an abandoned railroad bed to the south entrance of the Unit, near the Unit's southwest corner. This is the limit of the current State deeded access along the railroad bed. The railroad bed, now referred to as Railroad Bed Road, is used by passenger vehicles, snowmobiles and ATVs.

Railroad Bed Road continues north, following the west side of the Unit seven miles, where it intersects a gravel road connecting to Route 11. After another half mile, the old railroad bed terminates where it meets the active railroad line that forms the next segment of the west boundary of the Unit. There is no deeded public access on this 7.5 mile portion of Railroad Bed Road. However, the landowner has given permission for snowmobiles and ATVs to use this segment of road, which is now part of ITS 111 snowmobile trail.

The Bureau has been granted a public use easement for the gravel road connecting the north end of the Railroad Bed Road to Route 11, for passenger vehicle and snowmobile traffic, and permission has been granted for ATVs to use a portion of that road, to the point where the ATV trail turns south to go to the west side of Schoodic Lake.

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Roads within the Unit

At the north entrance of the Unit, a fork in the road takes one either to the Inlet of Seboeis Lake (where the trailered boat ramp and several campsites are located) or down the east side of the Unit to Seboeis Lake Outlet and dam and on to Endless Lake Outlet (where the Endless Lake primitive trailered boat ramp and campsites are located). Both of these are maintained public use and shared use roads, open to passenger vehicles and ATVs.

A shared use management road crosses the newly acquired parcels at the south end of the unit. This road connects on one end to the east side shared use road at a point about midway between the Seboeis and Endless Lakes Outlets. The opposite end connects to the Railroad Bed Road at the south entrance. After the land was acquired, parts of this road were upgraded and a new bridge was installed to meet public access needs; however, the road is not currently suitable for 2WD passenger vehicles. The road is open to ATVs. A number of forest management roads branch off both the east and south shared use roads. As described above, all of the shared use roads within the unit are open to snowmobiles when not being used for forest management.

There is no road connection to the Unit nor deeded right-of-way from the east, although the ITS 82 snowmobile trail enters the Unit from that direction, crossing the West Branch of Seboeis Stream just downstream from the Endless Lake outlet on a snowmobile bridge. The snowmobile trail crosses the adjacent private lands by landowner permission.

Vision for the Seboeis Lake Unit

The Seboeis Lake Unit is known for its warm and cold water fisheries, boating, picnicking and drive-to and water access camping opportunities. The Unit is often frequented by residents of neighboring communities, Dover-Foxcroft, Milo and Brownville, because of its close proximity and easy access for motorized and non-motorized recreation. Thanks to the 2012 public acquisition of the south end of Seboeis Lake, unfettered access to nearly the entire shoreline is now possible. The acquisition also serves as a permanent connection for the first multi-use trail in the Millinocket/Milo region. Motorized recreationists on snowmobiles and ATVs can benefit from the multi-use trail in Millinocket and points south to the Bradford/LaGrange Parcel by using 12 miles of connector trail in the Seboeis Lake Unit. Diligent and persistent effort from local clubs, towns and other landowners made this trail system a reality. The Bureau's stewardship focus at the Seboeis Lake Unit will continue to care for the remote recreation character, scenic shoreline and views, wetlands and waterfowl/wading bird habitat while managing forests for future high quality timber products.

Allocations for the Seboeis Lake Unit

The following “allocations,” as shown on the Seboeis Dominant Use Allocations map on page 117, define general management objectives and direction for specific areas within the Seboeis Lake Unit. (Secondary allocations are not shown on the map.) See Appendix C for a description of designation criteria and management direction for the various allocation categories.

Special Protection Dominant

- The rare upland plant community east of Otter Brook, on the east margin of the unit, known as the “Cold Air Talus Slope.”
- A large area of mature to late successional forest east of Otter Brook, surrounding the Cold Air Talus Slope.
- Leyford Island, the largest island in the Bureau's eastern lands holdings, containing mature to late-successional Lowland Spruce-Fir Forest and a small population of American chestnut.
- An active bald eagle nest located at the north end of Seboeis Lake.

Wildlife Dominant

- Riparian buffers of 330 feet around the Inland Waterfowl and Wading Bird Habitat along the northern and western borders of Seboeis Lake and Northwest Pond
- A riparian buffer of 330 feet throughout the Unit's other shoreland and major wetland areas.
- Riparian buffer of 330 feet at the outlet of Seboeis Lake where there is known habitat for the Creeper, a mussel listed as “special concern”.
- A deer wintering area west of Northwest Pond on the west side of the Unit.

A secondary Remote Recreation allocation is also designated for the riparian areas around the above-stated waterbodies.

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A secondary Timber Management allocation is designated for the deer wintering area and riparian buffers, subject to wildlife, recreation, and visual concerns.

Remote Recreation Dominant¹¹

- A half-mile “no motorized recreation” buffer around Turtle Pond starting from the normal high water mark. Timber management will continue within this buffer area.
- Areas around water-access and hike-to campsites throughout the Unit.

Developed Recreation Dominant

- The trailered boating facilities at Seboeis Inlet and Endless Lake, the drive-to campsites at Seboeis Lake Inlet and Seboeis Lake Outlet, and Endless Lake, Moosehorn Camps, and the motorized trails on “shared use” roads.

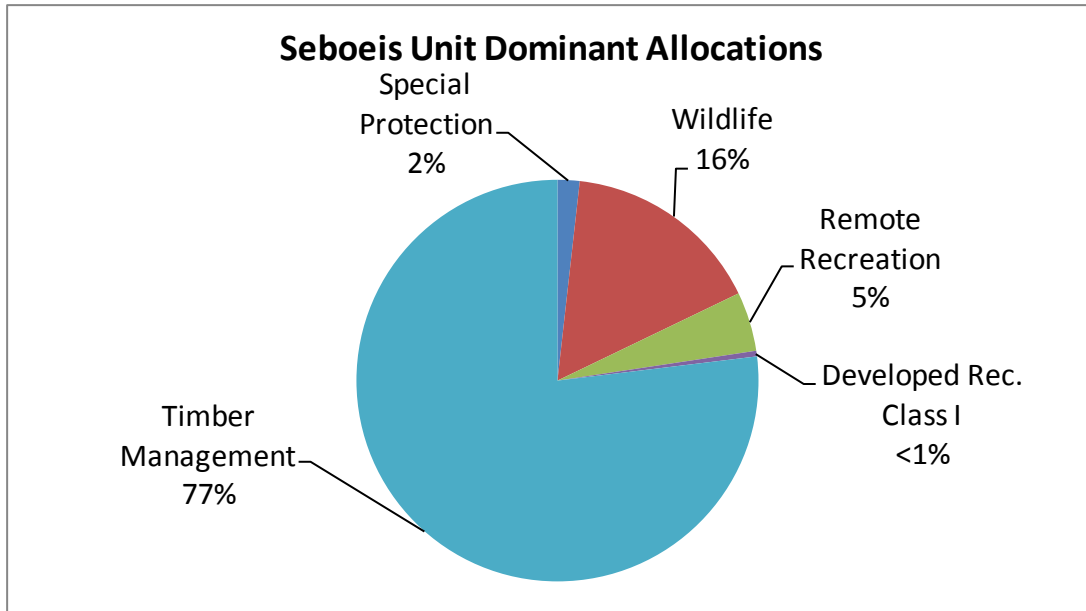
Timber Management Dominant

- All other areas not allocated above are designated Timber Management.

Seboeis Unit Allocations

Allocation	Number of Acres	
	Dominant	Secondary
Special Protection	380	Not applicable
Wildlife	3,435	Not applicable
Remote Recreation	1,020	3,220
Developed Recreation Class I	100	Not applicable
Timber Management	16,435	4,455
Note: acreages are representations based on GIS metrics rounded to the nearest 5 acres, and do not sum to the acreages by parcel due to measuring error and limits of GIS precision (above acres are overall high by approximately 1%).		

¹¹ The following proposed facilities will be allocated for Remote Recreation once the locations and routes of these facilities are determined during the Plan’s 15-year life: a hiking trail(s) to Turtle Pond; hand carry boating facilities at Northwest Pond and the south end of Seboeis Lake; and, hike-to and water access campsites at Northwest Pond and the south end of Seboeis Lake.



[INSERT 11 X 17 SEBOEIS DOMINANT USE ALLOCATIONS MAP]

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(back of 11 X 17 Seboeis Dominant Use Allocations map)

Seboeis Lake Unit Issues/Opportunities and Recommendations

Issue/Opportunities	Recommendations
<i>Wildlife Management</i>	
<u>Bald Eagle Nest</u>	<ul style="list-style-type: none"> • Monitor and manage activities near the bald eagle nest in consultation with the MDIFW.
<u>Invasive Aquatic Species</u> There is a concern about boaters introducing invasive aquatic species to waterbodies in the unit, via boats used in infested waters, and that may not be sufficiently aware of the threat and of preventative measures.	<ul style="list-style-type: none"> • Install additional MDIFW or DEP signage at existing and any new boat facilities informing boaters about invasive aquatic species threats and preventative measures to take before launching boats in the unit.
<u>Deer Wintering Area</u> There is a state-wide interest in enhancing/adding to deer wintering areas. The DWA at Northwest Pond could be rehabilitated and expanded.	<ul style="list-style-type: none"> • Timber management practices in the DWA and surrounding area will seek to enhance softwood cover for wintering deer with the long-term objective of rehabilitating and expanding the DWA.
<i>Recreation Management</i>	
<u>Non-motorized trails</u> Turtle Pond provides the opportunity to offer hike-in fishing for native trout at a remote pond. In addition, the unit presently offers no non-motorized trails.	<ul style="list-style-type: none"> • Identify and establish a hiking trail(s) to the shore of Turtle Pond. Consider using an existing foot path at the Turtle Pond Outlet to serve as access to Turtle Pond from Seboeis Lake.
<u>Boating Facilities (hand-carry)</u> The newly acquired south parcel provides an opportunity to enhance hand-carry boat access to the south end of Seboeis Lake. If a right-of-way can be acquired across the Railroad Bed Road, north of the current ROW to the management road entering the south parcel, additional carry-in boat access opportunities could be explored on the southwest side of the lake and Northwest Pond.	<ul style="list-style-type: none"> • Improve an existing facility, just acquired by the recent land transaction, on the east shore at the south end of Seboeis Lake. Access will be via a spur road off the south shared use road, following an old forest management road, and a small parking area (3-5 vehicles) will be developed. • Pursue acquiring a right-of-way along the Railroad Bed Road along the western side of the unit; if acquired, examine developing facilities at Northwest Pond and the south end of Seboeis Lake.
<u>Boating Facilities (trailer)</u> Inadequate parking at the Inlet boat launch facility causes crowding, and causes boaters to park their vehicles and trailers in the gravel pit, reducing the area available for camping. This problem is exacerbated by camp lot lessees leaving their vehicles	<ul style="list-style-type: none"> • Redesign the Seboeis Inlet facility to increase vehicular parking availability and to reduce traffic congestion and conflict with use of campsites. • Consider language in renewed leases that describes designated areas for lessees to park their vehicles on a long-term basis.

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<p>and trailers at the Inlet boat launch for extended periods of time.</p> <p>The Endless Lake boat launch is too shallow for many boats and is too near existing campsites.</p>	<ul style="list-style-type: none"> • Redesign or move the Endless Lake facility slightly to provide direct access into deeper water, increase vehicular parking opportunities, and minimize conflicts with the adjacent campsites.
<p><u>Campsites (drive-to)</u> With the expansion of ATV trails connecting to and within the Seboeis Unit, there is increased interest from ATV riders in enhancing camping opportunities at drive-to campsites.</p>	<ul style="list-style-type: none"> • Assure ATV access to the Seboeis Outlet campsite. • Explore options for ATV camping off the Railroad Bed Road in the event a ROW can be acquired extending existing public access rights. • Retrofit existing campsites in the Unit, where it is appropriate, to be more “handicap accessible.” Concentrate efforts at existing sites at The Pit on Seboeis Lake and any new sites.
<p><u>Campsites (hike-to / water access)</u></p>	<ul style="list-style-type: none"> • Examine potential sites at Northwest Pond, including three sites at the southern tip of “The Tongue” that were considered by the Advisory Committee. Recommend keeping the east shore of Northwest Pond void of campsite development to minimize human activity in wading/breeding bird habitat. • Examine potential sites at the south end of Seboeis Lake. • Inventory existing informal campsites along the shore of Endless Lake and identify the need for campsite improvements and/or suitable sites for additional boat-in campsites. Add water access campsites along the shore of Endless Lake, if suitable sites exist. • Monitor any nesting loons that are found in the vicinity of potential new water-access campsites one year before site development, and monitor in the vicinity of any campsites that are developed to assess the extent of impacts of human and other disturbances to these birds.
<p><i>Timber Management</i></p>	
<p><u>Future Management Guidelines</u> Management of timberlands demonstrates exemplary multiple use and sustainable forest management producing high quality</p>	<ul style="list-style-type: none"> • The Bureau will continue to manage timber to produce high value timber products through the application of appropriate silvicultural methods.

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<p>saw logs and managing with the objective of maintaining large areas of late successional character. Timber management guidelines outlined in this Plan reflect current best practices geared to current conditions, which may change over time. These recommendations are provided to enhance the public’s understanding of how the Bureau will manage timber resources on the Seboeis Unit. These recommendations are not a “prescription” – only general guidelines.</p>	<ul style="list-style-type: none"> • Improve the future quality of hardwoods on acres where an abundance of low quality beech exists. • Improve the future quality of mixedwood type.
<p><i>Transportation Considerations</i></p>	
<p><u>Public Access to West Side of Unit</u> Although permission has been secured for ATV and snowmobile use of the Railroad Bed Road, securing long-term access for motorized recreation and passenger vehicle access remains a concern.</p>	<ul style="list-style-type: none"> • Work to secure public vehicular access on the remainder of the abandoned rail bed running along the western boundary of the Unit where no deeded public access yet exists.
<p><i>Invasive Plants</i></p>	
<p><u>Common Reed</u></p>	<ul style="list-style-type: none"> • Control the small population of common reed (<i>Phragmites australis</i>) located at the Unit’s Northwest Pond quadrant before it enters larger open wetlands nearby.

Various Small Lots in the Central Penobscot Region

The smaller lots within the Central Penobscot Region range from newly acquired gems within the immediate viewshed of Katahdin to veteran suppliers of forest products that together are important components of the Public Reserved Lands “timber basket.” These smaller lots --- East Turner Mountain, Wassataquoik, Millinocket Forest, Seboeis Plantation, T3 R9 NWP (Gray Ledge Deadwater), and Bradford-LaGrange --- receive little public use compared to the larger Nahmakanta and Seboeis Lake Units, but they provide the vital resources needed to protect and manage for dispersed recreation, exemplary natural communities, wildlife, cultural resources and timber on all Maine’s public lands. They contain a variety of forest conditions, with mature softwoods and mixed woods the predominant type. Notable ecological features on these smaller lots include extensive floodplain forests and wetlands, mature American chestnut trees, steep uncut forests and rocky slopes, and unique post-glacial red pine ridges and wetland swales.

MNAP completed a natural resources inventory of the Central Penobscot Region Smaller Lots for this Plan. The inventory is based on prior studies and reports and additional field work conducted by MNAP staff in 2010 and 2011 to revisit selected sites. Much of the information below on the forest communities, wetlands, fisheries and wildlife resources of the smaller lots was excerpted from this inventory (MNAP 2012a).

East Turner Mountain Lot

The East Turner Mountain Public Lot, in T4 R8 WELS, came to the Bureau as a result of the efforts of the State through the Department of Conservation, Baxter State Park Authority, and the Trust for Public Land (TPL) to purchase land around Katahdin Lake to add to Baxter State Park. In 2006, the Maine Legislature authorized a complex set of transactions that resulted in the addition of a 4,040 acre parcel around Katahdin Lake to Baxter State Park Authority, and the acquisition of a 2,574 acre parcel north of the Katahdin Lake extending to Wassataquoik Stream by the Bureau, the East Turner Mountain Public Lot. The intent of this acquisition was to provide for multiple uses including hunting. The lot was acquired in common and undivided ownership with the state holding overall a 77 percent interest.

The East Turner Mountain Lot abuts the eastern boundary line of Baxter State Park, and stretches from the south bank of Wassataquoik Stream to the peak of East Turner Mountain, at the southern boundary of the Lot. Portions of the north and east facing mid and lower slopes of North and East Turner Mountain are on the property, as well as the broad Twin Pond Brook drainage that descends between those mountains. The public lot also contains shore frontage on Wassataquoik Stream, which begins in Baxter State Park and empties into the East Branch of the Penobscot River on the Wassataquoik Public Lot. Remote and inaccessible by vehicle, this area can be accessed by a new hiking trail built by Baxter State Park in cooperation with the Bureau. Currently there is no vehicle access to this lot. The Infrastructure map on page 131 provides the regional context for the Public Lot in relation to Baxter State Park, other nearby small lots in the Central Penobscot Region and other conservation lands.

Forest Communities

The forest on this Parcel is variably aged, but nearly all is mature. Much of the area apparently burned around the turn of the previous century, and there are large areas where the forest is roughly 100 years old. In addition, there are stands where the fire jumped or otherwise did not burn. These stands have older trees in the 100 to 200+ year age class and reflect the varying cover types found within the Spruce – Northern Hardwood Forest Ecosystem. Specific natural community types within this broader ecosystem include Beech - Birch - Maple Forest, a Spruce Talus Woodland, and a Lowland Spruce – Fir Forest.

The **Beech - Birch - Maple Forest** is located on the rocky mid to upper slopes of the Twin Pond Brook drainage. It is dominated by sugar maple and beech with smaller amounts of yellow birch and red maple. Larger sugar maples are in the 24” DBH range and may be 150 years old or older. This northern hardwood stand covers about 170 acres, part of which lies within Baxter State Park.

Downslope of East Turner Mountain is the broad Twin Pond Brook drainage. Much of this area is also beech – birch – maple forest and is regenerating after the historic fire from the early 1900s. The Twin Pond Brook drainage is unusual in that numerous streams and seeps course down over a broad slope (> 0.5 mile in width) of rocky terrain.

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In more typical conditions, this type of drainage would have one or two streams. The high density of streams and seeps creates a dynamic habitat for plants, wildlife, and fisheries and would necessitate special precautions if timber harvesting were ever considered. Many of these cold headwater streams may provide habitat for brook trout, but fishery surveys have not been conducted.

An approximately 65 acre **Spruce Talus Woodland** lies just downhill from the conspicuous cliffs and outcrops on the east slope of North Turner Mountain. This community is characterized by a partially open canopy of red spruce, mixed with small amounts of paper birch and white pine. The moderately sloped substrate is made up of large rounded boulders, which create stressful growing conditions. The largest red spruces are 12” DBH and only about 25 feet to 40 feet tall. Other vegetation, including creeping snowberry, velvet-leaf blueberry, and northern running pine is thinly distributed and limited to areas where pockets of soil have accumulated. In open areas reindeer lichens form large blue-gray tufts over the boulders. Charcoal from the historic fire is easy to find at this site.

The northern border of the parcel follows Wassataquoik Stream in which lies the Wassataquoik floodplain. The floodplain has little to no evidence of past timber harvest or other human use (or if there was harvesting, evidence was eradicated by the fires of the early 1900s). The floodplain of the stream supports some scattered older trees including red oak, big tooth aspen, and red maple, but unlike the broader areas farther downstream near the confluence of the East Branch of the Penobscot River, it is not extensive in this parcel.

From its origin as a headwater stream on Katahdin, the pristine Wassataquoik Stream follows a lengthy glacial esker along the border of the parcel, with associated gravel ridges and backwater wetlands forming along former stream channels. The stream supports native brook trout and landlocked salmon, as well as fallfish, blacknose dace, creek chub, white sucker, smallmouth bass, and other minnows (Nels Kramer, MDIFW, 2011).

Timber

Perhaps 40 percent of the land lies on the slopes of East Turner and North Turner Mountains and is inoperably steep. Another several hundred acres is a myriad of tributaries and wetlands associated with Twin Ponds Brook, which would probably mandate winter-only harvests there and to the north should changing access make timber management feasible. There are also several wetland areas amidst the three-plus miles of shoreline along Wassataquoik Stream. Given economically feasible and uncomplicated access, perhaps half of this tract would be included in the Bureau’s regulated acres. However, current conditions make access very problematic, such that this entire tract should be considered as unregulated forest.

Harvest History

The previous landowner partially harvested a few dozen acres shortly before state acquisition, and the rest has probably not been harvested in 40 years or more. Of the

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conventionally operable acres (given a more normal access situation), about 75 percent is softwood type, 15 percent mixedwood, and 10 percent hardwood. Due to limited access and unregulated status, no timber inventory is available. However, judging by air photos, knowledge of nearby similar-looking forest on the Bureau's Wassataquoik Unit, and staff field visits, it's probable that spruce is overwhelmingly the leading species, likely followed by fir, cedar, maples, and birches, with some aspen on the slopes of East Turner.

Current Conditions

The northern half of the parcel and steep upper slopes of East Turner Mountain support mature softwood forest, while the southern half is characterized by mature northern hardwoods. With the exception of the eastern lobe of the parcel, the forest stands have relatively little history of human disturbance, and collectively they form an outstanding example of a **Spruce - Northern Hardwood Forest Ecosystem**. This intact forest ecosystem extends well beyond this parcel and covers the majority of the Turner Mountain formation and the area surrounding Katahdin Lake into Baxter State Park. It is remarkable for its near pristine condition and because it is one of the largest undisturbed examples of its type known from the state.

Wetland Resources

The west side of Wassataquoik Stream supports numerous wetlands and sloughs that together form a large moderate value Waterfowl and Wading Bird Habitat. These wetlands vary in cover and extent, and in some areas have been shaped by beaver activity. Cover types include red maple swamp, spruce - cinnamon fern swamp, alder - red maple shrub swamp, grassy marsh, and open water. This series of wetlands is likely good habitat for variety of game and non-game species.

Recreation Resources

Because this lot is adjacent to the state's largest backcountry area, it has high value for recreation. The parcel is roadless and there are no roads leading to the parcel. The most prevalent recreational use of the property is expected to be the newly built hiking trail, *Twin Ponds Trail*, linking Katahdin Lake in Baxter State Park with the Twin Ponds lean-to campsite, also in Baxter State park. This trail, constructed and maintained by Baxter State Park, crosses lands owned by Elliotsville Plantation, Inc. (EPI) as well as the East Turner Mountain property before re-entering Baxter State Park. A public access easement on the EPI lands extends from the East Turner Mountain Unit to the Wassataquoik Unit.

Wassataquoik Lot

The Wassataquoik Public Lot is comprised of approximately 2,099 acres acquired from Baskahegan Lands Company in 1984. The 1,000 acre Original Public Lot in T3 R7 WELS, that was located on the ground in 1846, was traded away to J. M. Huber Corporation in 1989.

The Wassataquoik Lot straddles the gentle slopes along Wassataquoik Stream and encompasses the north slopes of Hunt Mountain. The Lot is in the shape of a long rectangle, stretching approximately 3.8 miles from east to west and about three-fourths of a mile from north to south. The Wassataquoik Stream originates in Baxter State Park and flows eastward through a steep-sided v-shaped valley. There is an Ecological Reserve on the property at the confluence of the Wassataquoik Stream and the East Branch of the Penobscot River, encompassing the stream bank and river floodplain forest at the east end of the Lot. The Maine Rivers Study named the East Branch of the Penobscot-Seboeis River system as “one of the least developed watersheds in the northeastern U.S.” and ranked it as one of nine “outstanding river segments” in Maine. The Wassataquoik Stream was noted as significant for its botanical resources, an old growth white pine stand, and lack of development. Access to this unit was blocked in the last decade by road closures south of the unit, resulting from removal of a bridge over the East Branch.

Natural Communities and Ecological Reserve

The Lot contains a variety of upland and wetland natural communities, including Northern Hardwood Forest, Hemlock Forest, Transitional Aspen-Birch Forest, Lowland Spruce – Fir Forest, Spruce – Larch Forest Bog and open wetlands. Nearly one quarter of the Lot is an Ecological Reserve configured to conserve the exemplary Silver Maple Floodplain Forest at the mouth of the Wassataquoik Stream. The 775 acre Wassataquoik Stream Ecological Reserve encompasses part of one of the largest and most intact floodplain forests in the state, which extends both upstream and downstream of state lands along the East Branch of the Penobscot River.

Cultural and History

Wassataquoik is a Native American name thought to mean ‘place where they spear fish’ or ‘salmon river’. In “The Maine Woods” Henry David Thoreau describes his Native American guide explaining the name Wassataquoik should have been applied to the East Branch as well, not merely the smaller tributary stream. The East Branch of the Penobscot River served the Native Americans travelling from the main stem Penobscot or West Branch of the Mattawamkeag to Allagash Lakes and Aroostook watershed (Cook, 1985).

The early 19th Century brought logging to the Wassataquoik valley following the construction of the Military Road from Mattawamkeag to Houlton. Adventurers who travelled to the region to summit Katahdin began approaching from the east due to the proliferation of logging roads. (Earlier summits had been from the south side by travelling first up the West Branch of the Penobscot). The “Wassataquoik Tote Road” built in 1841 was used by loggers and mountaineers alike and a portion of the road was

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located on the now Wassataquoik Public Land. This road continued upstream as far as Russell Pond. Parson Marcus Keep first walked to Katahdin using the Wassataquoik Tote Road and then using a compass to navigate to the ridge that now bears his name. In 1848 he began cutting a path along a similar route that became the first clearly defined trail to Katahdin (Neff, 2006).

Around this time period, the Hunt Farm was established on the east shore of the East Branch above Whetstone Falls. William Harmon Hunt saw the opportunity of providing a place to stay for loggers and adventurers staging a Katahdin summit. Hiram Dacey established a smaller farm and Lunksoos Camps for the same purpose just two miles upstream also on the east shore (Neff, 2006). The Wassataquoik Lot now encompasses the west shore between these two farms/camps.¹²

In 1881, the Tracy-Love timber company began clearing rocks and building dams on the Wassataquoik in preparation for spruce log removal. The stream was notoriously difficult and expensive to tame for log drives. This fact, as well as a series of fires, caused the company to close by 1891. Katahdin Pulp and Paper later continued logging in the Valley, and their four foot logs were easier to manage in the Wassataquoik. Another fire in the Valley in 1915 again caused logging to be abandoned for a while.

Recreation Resources

The Wassataquoik Lot includes shoreland and islands on the East Branch of the Penobscot River. The East Branch flows from the outlet of Grand Lake Matagamon near the northeastern corner of Baxter State Park to its confluence with the West Branch in the Town of Medway. This 47 mile river section includes Class I through III paddling and requires several portages around falls. The river is attractive for trout and salmon fishing. Along the course of the river, there are a number of primitive campsites facilitating river trips. Campsites have recently been rehabilitated through a collaborative effort by the Bureau, private lands owners and user groups. One of these sites is on the Wassataquoik Parcel.

Two other campsites are along the Wassataquoik Stream and were at one time drive-to sites. The Wassataquoik Stream is noted in the Maine Rivers Study for its significant whitewater rapids and waterfall (called Grand Falls, in Baxter State Park). It is noted as significant as an ‘expert whitewater boating run’, for backcountry boating excursions, and for its anadromous and inland fisheries (US DOI and MDOC, 1982). The four-mile whitewater run from Deasy Pond outlet to the East Branch, which passes through the unit, is described by American Whitewater as a scenic intermediate difficulty run in a wilderness setting (American Whitewater 2010). The Infrastructure map on page 131 depicts the context of this unit in relation to other nearby small lots in the Central Penobscot Region, and the locations of campsites.

The International Appalachian Trail (IAT), which links to the A.T. in Baxter State Park and extends into Canada, passes a few miles to the north of the Wassataquoik Lot. The IAT trail map and guide recommends hikers follow an alternate route during periods of

¹² “Hunt Farm Easement”

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high water that follows Wassataquoik Stream through the Lot. The alternate route crosses the stream at an old logging road bridge on the east side of the Lot before continuing north out of the Lot and rejoining the main IAT trail.

The portion of ITS 85 that crossed this unit was permanently relocated several years ago when the ownership to the north changed, and the trail had to be shifted to the east of the East Branch Penobscot River.

Forest Resources

The Wassataquoik Lot also harbors notable patches of old forests, including a remnant stand of four to five acres of white pine and red spruce along a steep slope at the north side of Wassataquoik Stream with trees over 200 years old. There is a 180 acre stand of spruce and hemlock at the western boundary of the unit that includes many trees in the 120 to 150 year old range, and scored high on a ‘late successional index’ (a measure of old forest structure). This stand was selectively harvested in 2006 with the dual intent of removing forest products while retaining many of the valuable old forest structure characteristics of the stand.

Fire History and Insect Disturbance

Fire occurred in parts of the Lot giving rise to scattered stands of older aspen that are gradually transitioning to mixed stands of spruce, fir, and northern hardwood. The 1980’s spruce budworm outbreak had a limited impact on this Unit, but was prominent in the softwood stands along Deasey Brook.

Harvest History

Many parts of the Parcel north of Wassataquoik Stream were harvested in the 1970’s prior to state acquisition. The Bureau conducted a small harvest on stands immediately north of the Wassataquoik Bridge in 1992 and a larger operation on the lands west of the stream in 2007. The two harvests produced a total of 2,300 cords.

Current Conditions

The regulated forest, just over half of all forested acres in the Parcel, is about half softwood types and one quarter each of mixedwood and hardwood. The regulated acres are all reasonably well stocked, including those treated in 2007, though there are some sapling stands remaining from the circa 1970 harvests of the previous landowner. Current species mix is about 33 percent spruce, 15 percent red maple, and 10 percent each of hemlock, beech, and sugar maple. Pine is also present.

Future Management

Most stands have sufficient good quality stems, of all the above-named species except beech, to produce high value timber products. The major impediment for timber management at this time is the lack of road access. Should road access be gained, management should favor spruce and pine on all sites and sugar maple, yellow birch, and ash on fertile sites. There is some excellent red oak, especially on the eastern part of the lot mostly in the ecological reserve, and where this species is found on regulated acres it should be favored.

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Fisheries and Wildlife Resources

Both Wassataquoik Stream and the East Branch of the Penobscot River support native brook trout fisheries. In addition, the East Branch supports fisheries for landlocked salmon and smallmouth bass. Special regulations designed to enhance the brook trout and salmon fisheries have been implemented within the East Branch system, and results have been very encouraging according to MDIFW. The East Branch in this vicinity also harbors two rare riverine invertebrates, the creeper, a freshwater mussel and pygmy snaketail, a dragonfly. Both species inhabit swift, clean rivers and both are listed as *Special Concern* species by MDIFW. Sound riparian management should ensure that habitat for these species remains intact.

An approximately 85 acre series of beaver meadows that drain Deasey Ponds, on the western side of the Parcel, have been mapped as Wading Bird and Waterfowl Habitat by MDIFW.

Access

There is no deeded right-of-way access to this Lot by vehicle. Vehicular access was formerly possible from the south from the Swift Brook Road, but recently a bridge was removed on adjacent lands, removing vehicular access. Foot access is provided by a public access easement on surrounding EPI lands and water access is possible from the East Branch of the Penobscot River.

Millinocket Forest Lot

The Millinocket Forest is a 5,061 acre Parcel acquired by the state in 2011. The lot lies north of Millinocket Lake and southeast of Baxter State Park in T2 R8 WELS. It is a rectangular-shaped parcel, stretching approximately 6.3 miles from east to west and slightly less than 1.2 miles from north to south. The Lot is characterized by gentle slopes and young to mid-aged softwood and mixed forests. The Millinocket to Matagamon Snowmobile Trail passes through the property—a critical link in the ITS system between Millinocket and the Aroostook County trails. The Millinocket Forest Lot, located right at the base of Katahdin, includes almost constant views of the mountain as well as wildlife viewing opportunities through the meandering wetlands complex of Sandy Stream and the Mud Brook flowage.

Natural Communities

Forests

The Parcel contains part of the state's largest 'ribbed moraine' – a post-glacial feature of undulating sand and gravel ridges that alternate with shrub-dominated wetlands. Some of the sand and gravel ridges support a large stand of Red Pine-White Pine Forest that extends southward onto private lands. About 250 acres of this **Red Pine – White Pine Forest** are on state land. Red Pine – White Pine Forests are uncommon (ranked S3) in Maine, and at over 1,000 acres, this extensive stand (primarily on private lands to the

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south) is one of the largest of this type in Maine. Numerous trees are approximately 70 years old and 8-14” in diameter, and the composition varies from red pine dominated stands to a heterogeneous mix of red pine and white pine in lower or wetter sites. Poplars and paper birch are also mixed throughout, residuals from the past fire. The understory composition is characteristic of dry sites and includes lowbush blueberry (*Vaccinium angustifolium* and *V. myrtilloides*), bunchberry, bracken fern (*Pteridium aquilinum*), trailing arbutus (*Epigaea repens*), winterberry (*Gaultheria procumbens*), cowwheat (*Menanpyrum lineare*) and round leaved pyrola (*Pyrola americana*). In some areas stunted burn origin cedar is in the understory.

Wetlands

Wetlands within the Parcel include numerous kettlehole bogs, beaver meadows and rivershore natural communities. Approximately 25 percent of the lot is wetland, according to National Wetland Inventory maps. Most of the wetland acreage is non-forested and has been mapped as Waterfowl and Wading Bird Habitat by the MDIFW. In particular, the western part of the parcel supports two wetlands that are over 250 acres – one along Sandy Stream and another around Mud Brook Flowage.

Many of the wetlands show evidence of past or present beaver activity and are variants of bogs or marshes. Characteristic plants in these beaver meadows include Sweetgale (*Myrica gale*), leatherleaf, tussock sedge (*Carex stricta*), Canada bluejoint (*Calamagrostis canadensis*), spirea (*Spirea tomentosa*) and three way sedge (*Dulichium arundinaceum*).

Kettlehole bogs in the Parcel are small acidic peatlands and ponds isolated from other surface water flows. In these bogs the perimeter is a ring of black spruce that transitions to more open communities toward the center, including Leatherleaf Bog and Sedge-Heath Lawn, characterized by leatherleaf (*Chamaedaphne calyculata*), bog rosemary (*Andromeda glaucophylla*), cottongrass (*Eriophorum virginicum*), podgrass (*Scheuchzeria palustris*), pitcher plant (*Sarracenia purpurea*) and a carpet of sphagnum (*Sphagnum cuspidatum* and others). A few kettlehole bogs on the western side of the Unit support the orchids grass pink (*Calopogon tuberosus*) and the white fringed bog orchid (*Pletanthera blephariglottis*).

Sandy Stream is a free-flowing waterway (i.e., no artificial impoundments) that extends from Sandy Stream Pond in Baxter State Park southward to Millinocket Lake. It cuts through the western side of the property, and flooding and ice scour helps create conditions for **Cobble Rivershore** communities. These river shores are typically comprised of numerous disturbance dependant species. Along Sandy Stream, vegetation is sparse and includes lakeshore sedge (*Carex lenticularis*), lance-leaved goldenrod (*Euthamia graminifolia*), shining willow (*Salix lucida*), wild rye (*Elymus sp.*), and other grasses and herbs. Despite its remote location, two introduced (but not particularly invasive) plants were found. They are the white campion (*Lychnis alba*) and coltsfoot (*Tussilago farfara*).

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Fisheries

Sandy Stream supports wild brook trout, white sucker, blacknose dace, creek chub, common shiner, smallmouth bass, and other minnows (Nels Kramer, MDIFW, 2011).

Motorized Recreation

ITS 85 travels north from Millinocket and crosses the east end of the Millinocket Forest property before meeting up with ITS 83 at Whetstone Bridge, where both trails cross the East Branch of the Penobscot River. ITS 85 and ITS 83 split again on the Hunt Farm property, where they are now protected by an easement, with ITS 85 going north to Grand Lake Matagamon and ITS 83 going northeast toward Houlton. Both these trail are of great importance to the snowmobiling community and the Millinocket and Aroostook County winter economy, as they bring sledders from points west and south through the Katahdin region and to the Aroostook County trail system. Since groomed snowmobile routes are prohibited in Baxter State Park, and the landscape further east does not have as dependable of a snowpack, the current location of ITS 85 and ITS 83 is the most viable option for north-south connectivity. The Infrastructure map on page 131 depicts the context of this unit in relation to other nearby small lots in the Central Penobscot Region, and the locations of the snowmobile trails discussed above.

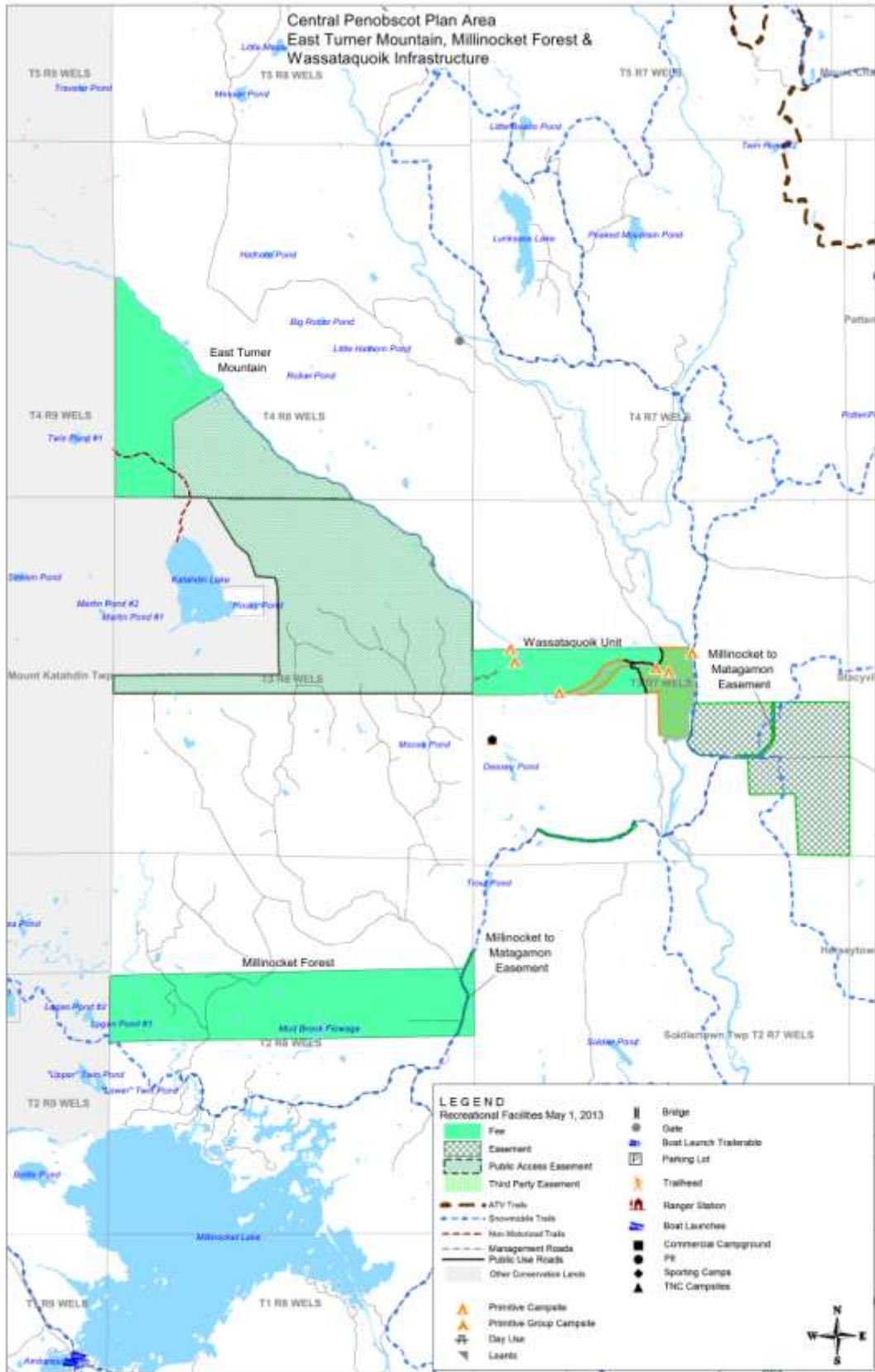
Access

Deeded access to the parcel is for land management purposes only. Huber Resources roads that access the property from a public road to the south have been used by the public; however, most roads on the property have tank traps at the boundary line, prohibiting vehicular traffic.

Harvest History

Prior to state acquisition, this Parcel was privately managed for forest products for over a century, and many areas have been heavily harvested within the last decade.

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Seboeis Plantation Lot

This is an original public lot comprised of 1,136 acres and located on the ground in 1849. The Parcel encompasses gently rolling terrain that slopes down to the West Branch of Seboeis Stream. The Parcel's soils are dominated by stony, well drained Plaisted soils on the uplands and poorly drained Monarda and Burnham soils on lowlands (USDA NRCS 2012). There is no deeded public access to this lot. The Infrastructure map on page 135 depicts the context of this unit in relation to the other nearby small lot in the Central Penobscot Region, the Grey Ledge Deadwater Lot.

Forest Resources

The original public lot on Seboeis Plantation lies mostly between the two branches of Seboeis Stream, with the West Branch isolating 85 regulated acres of the lot's southwest corner. Ten percent (127 acres) is nonforest, some in roads but mostly open wetlands. All the forest land is considered to be operable and is included in the regulated acreage. Most of the lot is level to slightly sloping, with some moderate slopes in places, and soils of all but the excessive drainages are found, with many acres in somewhat poorly to poorly drained land. Despite the moist soils, the land produces excellent timber of most species and holds the highest proportion of pine of any tract in the Plan area. Much of the abutting land had heavy harvests, often clearcuts, mostly during the period 1980-1990. These abutters' harvests often resulted in the loss of winter cover for deer, and one was cited for a violation for excessive harvesting in the deer wintering area along the East Branch of Seboeis Stream. Much of the softwood acreage on the public lot has insufficient tall crown closure to function as primary cover, due mainly to over mature fir either dropping out of the stand or being harvested after severe budworm damage.

Harvest History

Bureau harvesting in 1989-92 yielded almost 5,200 cords from 560 treated acres, and harvests beginning in 2010 have produced 6,000 cords from about 600 acres. Both harvests concentrated on removing lower quality trees while leaving the vigorous and well-formed ones to grow, with hardwood pulpwood the leading product taken each time.

The eastern side of the Parcel has been harvested a couple of times within the past five years and about 25 years ago. The summer 2012 harvest yielded 3,274 cords; the winter 2013 harvest yielded 1,074 cords. The harvests were characteristic of those on public lands – selection cuts that retained considerable standing volume (60 to 70 sq. feet/acre), including a number of super-canopy white pines and large hemlocks. Most trees in residual stands are 6-12" DBH. The surrounding private lands were very heavily harvested about 20 years ago and are now in early successional status.

Current Conditions

Most forest stands on the parcel are a mix of pole timber and saw timber, with softwood and mixed wood dominant. On the northeast side of the lot, Hazeltine Ridge supports the only extensive northern hardwood forest on the lot, and in places it has a significant white pine component. Off this ridge, most of the forest within the Unit is a mix of Spruce – Northern Hardwood forest, with spruce, fir, and paper birch dominant in poorly drained

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areas and northern hardwoods mixed in on mid slopes. There are also scattered stands of Hemlock forest, including a small uncut patch near the eastern border of the Parcel.

The regulated acres currently hold about 22 cords per acre. Most volume is found among four species: red spruce (28 percent of tract volume), white pine (19 percent), red maple (18 percent), and balsam fir (14 percent). Five other species each comprise 3-5 percent of the volume. Most spruce and pine is good to excellent in quality, red maple is poor to fair with some good quality trees. The fir is split between some remaining older trees with increasing defect and younger trees mostly of good vigor, though much of the older component was taken in the recent harvest. Among other species, hemlock is generally of decent quality, cedar almost always poor, beech well infested with the bark disease, sugar maple and the birches fair to good, aspen sometimes good and sometimes old and defective. Most areas are well regenerated, and many acres hold two-story stands. Pine and spruce are keys to future management, with fir always present and a valuable mid-rotation product. Acres where hemlock is abundant may serve as the core areas for deer winter cover. Stands heavy to hardwoods are often rich in low vigor beech but usually have sufficient quality stems to work with. Harvesting in these stands should focus on improving overall quality.

Wildlife and Fisheries

The Parcel contains 142 acres of a 'high value' Waterfowl and Wading Bird Habitat ranked by the Maine Department of Inland Fisheries and Wildlife (MDIFW) that extends southward along the West Branch of Seboeis Stream. Seboeis Stream is a largely free-flowing stream that is stocked with brook trout. Seboeis Stream also supports common sucker, brown bullhead, fallfish, smallmouth bass, creek chub, common shiner, pickerel, and other minnows (Nels Kramer, MDIFW 2011).

T3 R9 NWP (Gray Ledge Deadwater)

This is an original public lot comprised of 960 acres and located on the ground in 1841. This lot is located just a few miles east of the Seboeis Lake Unit. About 30 percent of the parcel is made up of a large wetland complex found in the center of the lot. The Infrastructure map on page 135 depicts the context of this unit in relation to the other nearby small lot in the Central Penobscot Region, the Seboeis Plantation Lot.

Natural Resources

A notable ecological feature of this parcel is a 350 acre Unpatterned Fen. This entire wetland is identified by Maine Department of Inland Fisheries and Wildlife as a high value Waterfowl and Wading Bird Habitat.

Soils on the entire parcel range from well-drained Thorndike silt loams on the northwestern corner to being poorly drained Monarda and Burnham soils in the lowlands (USDA 2012).

Forest and Harvest History

Forest cover consists of mature mixed and hardwood stands that have been selectively harvested by the Bureau within the last five years. Prior to that, some parts of the Unit were harvested by Diamond International Corporation in the 1950s, and there was a small timber trespass on the Parcel in the 1990s. Stands on the upper west side of the Unit (west of the management road) are hardwood dominated, with sugar maple, yellow birch, and beech as key components of the forest. Stands on lowlands east of the management road consist of spruce, fir, white pine, and hemlock with about 50 acres of cedar abutting the open wetlands. Even in areas that have been harvested by the Bureau, some stands maintain late-successional values.

Because of the wetland, access to upland forest must come from three different points, NW, NE, and SE. Much of the upland is fertile enough to grow quality timber, especially of softwood species, and some on the west part of the lot also holds good hardwoods as well. Prior to the Bureau recovering the timber and grass rights, the most recent harvesting was done about 1970, and appeared to be fairly light on the west portion but often heavy on the east and northeast. The initial Bureau-managed harvest occurred in 2009, producing nearly 2,000 cords, just over half softwoods, with $\frac{3}{4}$ of all volume being low quality trees sold for pulpwood.

Current Conditions

The current forest holds about 22 cords per acre. Spruce is the most common species with 24 percent of tract volume. Next come cedar at 15 percent, fir at 13 percent, red maple at 11 percent, hemlock and pine with 9 percent each, and beech at 7 percent. The spruce, pine and hemlock are all generally good quality, as is the younger fir. Hardwoods are variable, with some good quality maples and yellow birch in the western part of the lot and lesser quality elsewhere. Cedar is generally of poor quality.

Future Management

Though any timber management is subject to the complicated access and relatively small acreage, the general objectives should be to favor spruce and pine, and hemlock/hardwoods on the western portion. A large part of the regulated acres is riparian buffer, and though that status generally doesn't mean much change from the usual Bureau management, it should always be factored in.

Wildlife

Abundant beaver activity is evident along Cedar Brook, which enters the large wetland complex from the northwest. Fisheries data indicates that the following species occurred in Seboeis Stream: chubs, white sucker, chain pickerel, sunfish, and smallmouth bass (KnowledgeBase, 2012).

Bradford/LaGrange Lot

The Bradford/LaGrange Public Lot is comprised of approximately 2,010 acres located in Bradford, LaGrange, and Orneville Townships. The acreage in Bradford consists of 804 acres acquired from International Paper Company in 1985. The 1,179 acres in LaGrange is the remainder of the original 2,048 acres acquired from International Paper Company in 1985 after 869 acres of that total was conveyed to Gardner Land Company, Inc. in 2006. The 27 acres in Orneville Township is the result of an auction purchase from the State of Maine, Bureau of Revenue Services in 2008. In 1985 when the Bradford-LaGrange lots were acquired, it was thought that they would later be traded; however, due to their timber, wildlife, and diversity values in an area with very limited public ownership, they have been retained.

This lot is located in three towns, two organized and one unorganized, and is accessed via the South LaGrange Road at the south end of the lot. The property straddles the Bradford, LaGrange and part of Orneville Township town lines and is located mostly in Penobscot County with a small triangular piece of the Lot (the 27 acre Orneville Township parcel) that stretches into Piscataquis County. State Routes 16 and 155/6 surround the property.

Natural Resources

The lot is located at the juncture of extensive wet sediment soils associated with the Penobscot embayment and the lower lying dense basal glacial tills of the western foothills. The wet sediment soils of the Lamoine/Scantic/Biddeford associations follow the flat topography parallel to Dead Stream and the numerous smaller brooks. The upland topography is very subdued with generally only 80 foot difference in elevation. These soils are generally very stony silt loams of the Monarda/Telos/Howland complex and the Brayton/Colonel complex, with small areas of Chesuncook and Dixfield soils. Slight differences in landform make for remarkable differences in soil drainage. Soils are derived largely from fine textured slate, phyllite and quartzite. Areas which have a mix of calcareous sandstone or limestone bedrock seams are capable of generating productive forest stands.

The Bradford/LaGrange Lot is comprised of mid-successional and mature forest on lowlands west of Dead Stream. The Unit contains many examples of forest communities typical of Maine's Penobscot Valley lowlands. It was owned by forest industry until 1985 and has been managed by the state since then. Harvesting by the state has been comparatively light and selective, with retention of much structural diversity (i.e., large trees and snags). Several stands maintain late successional components, including large woody debris and snags.

Lowland spruce-fir and hemlock are the dominant forest types on the northern and eastern sides of the Unit, with stands of northern hardwoods and mixed wood on the west and south side of the tract. Hardwood stands include some patches of Sugar Maple Forest, including large basswood and white ash trees and some other indicators of soil enrichment, such as Christmas fern (*Polystichum acrostichoides*).

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Of particular note is the presence of several healthy, medium sized (16”+) American chestnut (*Castanea dentata*) trees on the property, as well as a number of seedlings and saplings. Mature chestnuts are rare in Maine, and the Bureau’s forest managers seek to retain them and promote regeneration where possible.

In low wet areas adjacent to streams, patches of Cedar- Seepage Forest occur, the largest of which is ~30-40 acres. Some cedar stands show little evidence of past harvesting.

The lot also contains approximately 100 acres of ‘moderate value’ Wading Bird and Waterfowl Habitat at beaver flowages along a tributary of the Dead Stream. The Unit also includes over 380 acres of Deer Wintering Area in this same vicinity.

In 2011 several stems of Japanese barberry (*Berberis thunbergii*) were found in the southwest portion of the Unit. Barberry is an invasive plant more typically found in Southern Maine, and it is unusual to find it in intact woods away from homes or roadsides. Most of these stems were pulled.

In summer of 2011, a male wood turtle (*Glyptemys insculpta*) was found near Dead Stream about a half mile downstream of the Parcel. This turtle species is listed as Special Concern in Maine and was recently listed as globally vulnerable (‘G3’) by NatureServe. Suitable wood turtle habitat likely exists on the Lot, and radio-telemetry work in Maine and elsewhere confirms that individual wood turtles may move several miles up and down streams during their active period from early spring through fall. Considered one of the most terrestrial of Maine's turtles, they also frequent riparian and upland habitat adjacent to stream and rivers to bask, forage, and nest.

Two species of rare freshwater mussel, the creeper (*Strophitus undulatus*) and brook floater (*Alasmidonta varicosa*), were also found in Dead Stream near South LaGrange Road. Both species inhabit cool, well oxygenated streams in Maine, and both were last observed at this site in 2006. The creeper is listed as Special Concern, and the brook floater is listed as State Threatened in Maine; the brook floater is also listed as globally ‘vulnerable (‘G3’) by NatureServe. In fact Dead Stream is known to support eight of the ten native mussel species in Maine, and its habitat for these species is considered excellent (Swartz 2012).

Fisheries and Wildlife Resources

The property has a small amount of frontage on the East Branch of Dead Stream and Bear Brook (whose major tributary crosses the property from west to east). In addition, Bear Brook has numerous tributaries on this parcel. Several species of rare freshwater mussels have been found on this area of Dead Stream. Historically, Bear Brook has been considered a locally important brook trout nursery stream. In recent years, numerous beaver dams on all these streams have changed the ambient water temperature significantly.

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A portion of a deer wintering area is located on the parcel. The area supporting cover and used by wintering deer on the parcel is significantly larger than the mapped area when populations are high.

MDIFW uses the property for black bear research and the University of Maine uses the lot for forest ecology and silviculture classes.

Motorized Recreation Resources

The South LaGrange Road runs along the south end of the Lot and is an authorized ATV trail which is connected to the Bureau's LaGrange Multi-Use trail and club trails for extended riding on trails to the west and east. Additionally, these multi-use trails are important in providing extended trail connections in the region. For example, the multi-use trail at the south boundary of the Lot ultimately goes through the Seboeis Lake Unit and northward to Millinocket. The summer roads on the Lot, accessed from South LaGrange Road, are "shared-use" and open to ATVs. There is a club-maintained snowmobile trail on the Lot that is used for dispersed hunting and wildlife watching. The Bradford/LaGrange Infrastructure map on page 140 depicts the locations of the roads and motorized recreation trails on the unit, and connections to nearby trails.

Timber

Timber Resources

Forest types on the property are approximately 45 percent mixedwood, 35 percent softwood and 20 percent hardwood. Approximately half of the hardwood type is intolerant hardwood dominated by aspen. There are also small stands of northern hardwood with sugar maple, ash, and basswood. Four large healthy American chestnut trees have been found on the parcel. Seed from these trees have been collected by the American Chestnut Foundation. There are small areas of floodplain forest along Dead Stream and Bear Brook. The mixedwood type is dominated by the hemlock- hardwood type typical of this region. Softwood stands are usually hemlock –spruce fir as well as small cedar seepage stands along small drainages and depressions.

The land is mostly either level or gently sloping, with soils ranging from well drained to being poorly drained. Most of the soils have moderate to good fertility and are capable of producing quality in hardwoods and softwoods.

Harvest History

Since 1900 and prior to state ownership, most of the Parcel was harvested several times. The most recent wide scale harvests were done in the 1960s, and the previous landowner cleared about 115 acres in the northeastern most corner of the Parcel in 1984. This clearcut was in response to serious budworm damage, and has regenerated heavily to aspen with fir and red maple also well represented. The Bureau conducted a relatively small harvest on the northerly portion of the lot in 1994 and 1995, with almost 1,900 cords, 85 percent pulpwood, from 200 acres. The southern two-thirds of the Parcel had a more extensive harvest in 2002 through 2004, with 14,000 cords removed from over 1,000 treated acres. Much of this was harvested using cut-to-length technology, which

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increased utilization and thus overall yields while being gentle to the site. Sixty-three (63) percent of the volume from this harvest was hardwood pulpwood, and another 17 percent softwood pulpwood, as management concentrated on retaining the better quality trees.

Current Conditions

The current forest holds about 22 cords per acre. Hemlock is the most common species with 22 percent of tract volume. Next come fir and red maple with 15 percent each, spruce at 11 percent, cedar 9 percent, yellow birch 8 percent, and white pine at 6 percent. The spruce, pine and hemlock are all generally good quality, as is the younger fir. Cedar is usually of poor quality. Hardwoods are variable but with considerable volume in good quality vigorous trees, especially of sugar maple, yellow birch, and white ash. The red maple is often of better quality than is usually the case. Aspen is generally good except for some mature stems and the occasional oak is almost always of fine quality. The American chestnuts, located mostly on the south half of the Bradford acres, have all been flagged for retention and are regenerating well.

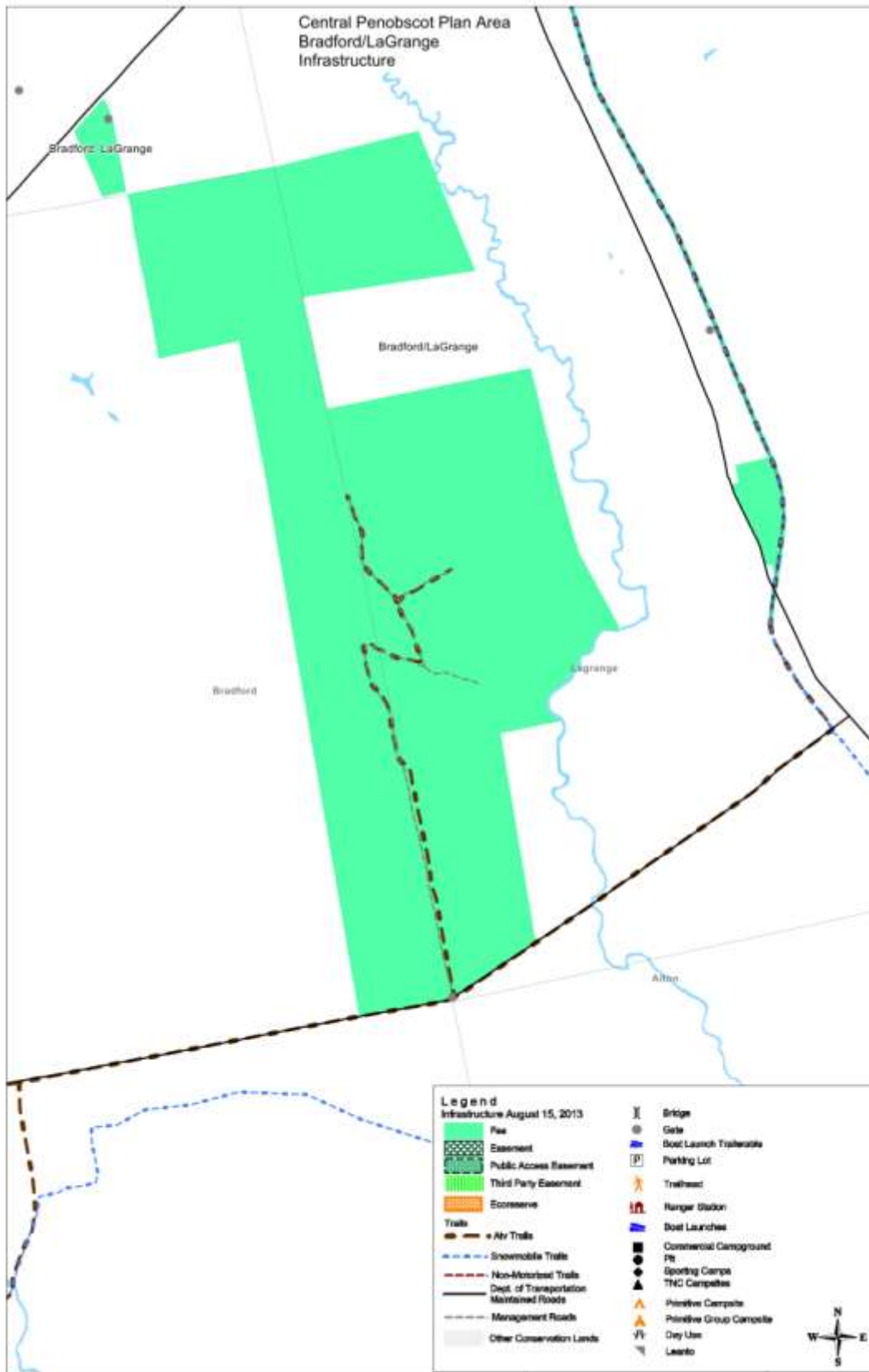
Future Timber Management

The lot includes some of the better softwood cover to be found in the general area, mainly of hemlock and spruce. These areas are considered to be quite valuable as deer wintering areas and also support a good bear population. The hardwood resource offers a good opportunity to produce high-value timber products from the more fertile acres, and on lands with less fertile acres a mixedwood or softwood product is preferred. Spruce, pine, and hemlock, plus the more valuable hardwood species, should be preferred, and oak always favored. A small portion of the 2002 through 2004 harvests sought to regenerate aspen to retain a component of early successional habitat and that should continue to be a management objective.

Transportation and Administrative Considerations

“Three season roads” and two winter roads have been constructed south of Bear Brook. The current traffic level causes some rutting and occasional grading of these management roads will be necessary to support this level of use. This access has also allowed for numerous cases of illegal dumping.

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Resource Allocations and Management Issues/Recommendations for the Smaller Lots

Allocations for East Turner Mountain Lot

The following “allocations,” as shown on the Dominant Use Allocations map on page 147, define general management objectives and direction for specific areas within the Unit. (Secondary allocations are not shown on the map.) See Appendix C for a description of designation criteria and management direction for the various allocation categories.

Wildlife Dominant

- Riparian buffer of 330 feet along Wassataquoik Stream and a riparian buffer of 75 feet on each side of all other streams in the Parcel.

Remote Recreation Dominant

- All other acres, due the high recreational use values of the property.

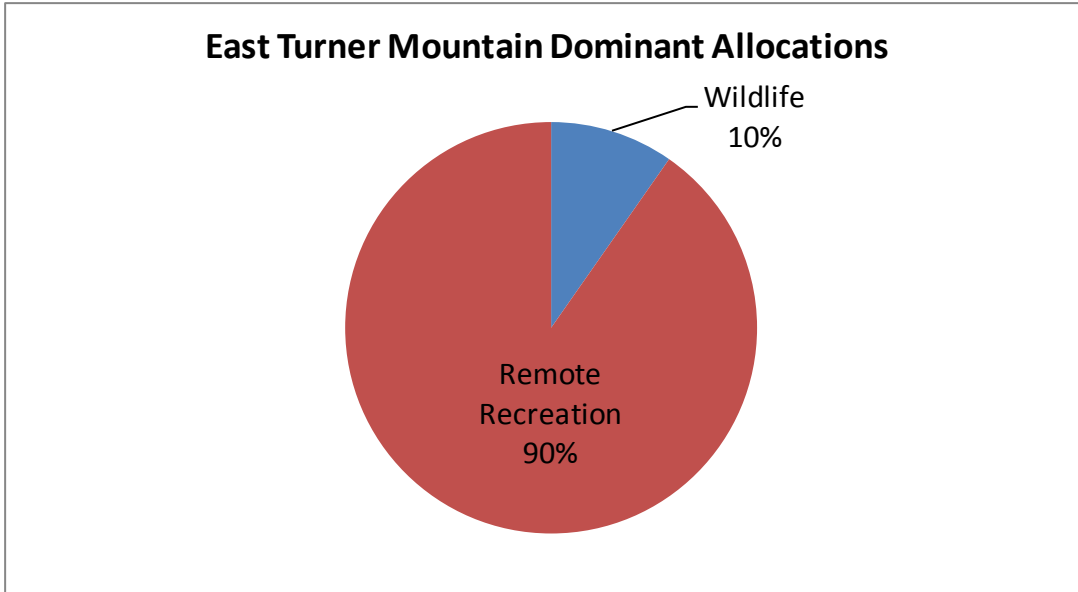
A secondary Remote Recreation allocation is also designated for the riparian areas along Wassataquoik Stream.

Visual Consideration

- A Visual Class I allocation is applied along the Twin Ponds Trail. A Visual Class II allocation is applied to the remainder of the property due to its visibility from Wassataquoik Stream and from portions of the East Branch of the Penobscot River, a branch of the State’s Penobscot River Corridor recreation easement.

East Turner Mountain Lot Allocations

Allocation	Number of Acres	
	Dominant	Secondary
Wildlife	220	Not applicable
Remote Recreation	2,250	120
Note: acreages are representations based on GIS metrics rounded to the nearest 5 acres, and do not sum to the acreages by parcel due to measuring error and limits of GIS precision (above acres are overall low by approximately 3-4%).		



East Turner Mountain Lot Issues/Opportunities and Recommendations

Management Issues/Opportunities	Recommendations
Access to the lot is now restricted to hike-in access via Baxter State Park.	Monitor resource conditions and recreation remotely, using GIS data and secondary sources (e.g., Twin Ponds Trail use data from Baxter State Park), supplemented with occasional field visits. Pursue acquisition of vehicular access rights if the opportunity arises.

Allocations for Wassataquoik Lot

The following “allocations,” as shown on the Dominant Use Allocations map on page 147, define general management objectives and direction for specific areas within the Unit. (Secondary allocations are not shown on the map.) See Appendix C for a description of designation criteria and management direction for the various allocation categories.

Special Protection Dominant¹³

- The Ecological Reserve lying at the confluence of Wassataquoik Stream containing an exemplary Silver Maple Floodplain Forest — one of the largest and most intact

¹³ A Lowland Spruce Fir Forest exemplary plant community, approximately 180 acres and comprised of spruce and hemlock that range between 120 to 150 years old, is located within the Ecological Reserve. The west side of the East Branch of the Penobscot River is also within the Ecological Reserve supporting native brook trout fisheries, landlocked salmon and smallmouth bass. The East Branch of the Penobscot River also harbors two rare riverine invertebrates, the creeper (a freshwater mussel) and pygmy snaketail (a dragonfly).

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floodplain forests in the state, extended upstream and downstream of state lands along the East Branch of the Penobscot River.

Wildlife Dominant

- A riparian zone of 330 feet on each side of Wassataquoik Stream that is not within the Ecological Reserve.
- A riparian zone of 330 feet around a series of beaver meadows that drain Deasey Ponds, at the western corner of the Lot and are identified as Inland Waterfowl and Wading Bird Habitat by the MDIFW.

A secondary Remote Recreation allocation is also designated for the riparian areas along Wassataquoik Stream outside the Ecological Reserve, as is a secondary Timber Management allocation, subject to wildlife, recreation and visual concerns.

Visual Consideration

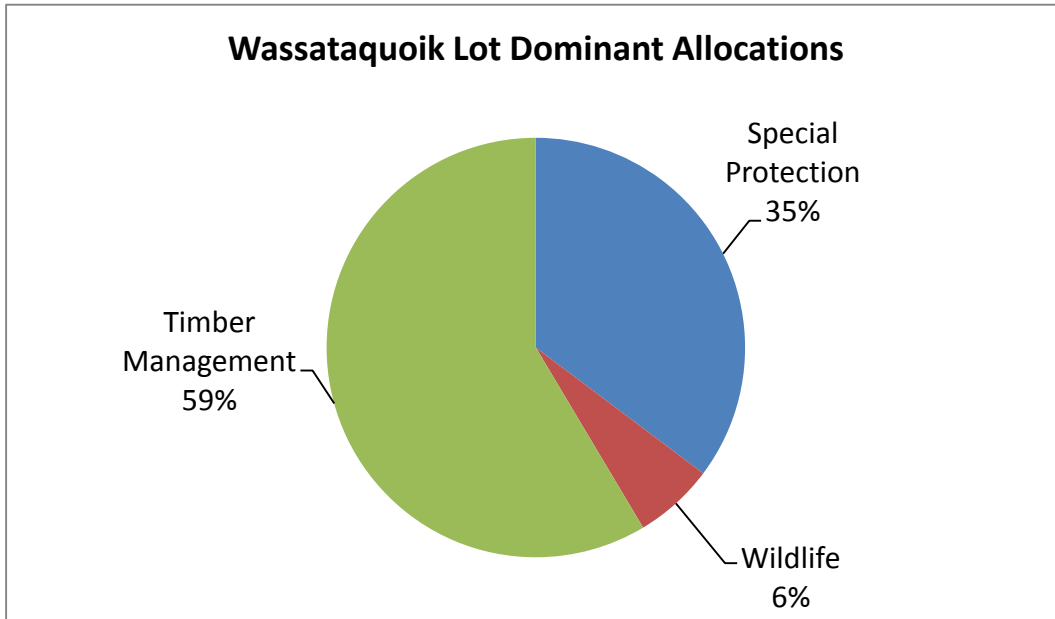
- Visual Class I status is given to all shorelines and remote campsites north of Wassataquoik Stream.

Timber Management Dominant

- All areas not designated Special Protection or Wildlife Dominant.

Wassataquoik Lot Allocations

Allocation	Number of Acres	
	Dominant	Secondary
Special Protection	740	Not applicable
Wildlife	130	Not applicable
Remote Recreation	0	295
Timber Management	1,230	295
Note: acreages are representations based on GIS metrics rounded to the nearest 5 acres, and do not sum to the acreages by parcel due to measuring error and limits of GIS precision (above acres are overall high by approximately 1%).		



Wassataquoik Lot Issues/Opportunities and Recommendations

Issues/Opportunities	Recommendations
<p><u>Dispersed Recreation</u> The lot does not have developed trails or amenities. There are a couple of existing campsites that are inaccessible by road along the Wassataquoik Stream. The sites are along an old road now identified by the IAT as an alternate trail route to be used when flows are high in Wassataquoik Stream, and hikers want to avoid a hazardous crossing of the stream on the primary trail.</p>	<ul style="list-style-type: none"> The Bureau should consider working with the IAT on utilizing these sites, in association with the IAT’s alternate route along the stream.
<p><u>Timber Management</u> Missing/decrepit bridges and abutter policies make access a challenging issue, affecting all management decisions but especially those related to timber and recreation.</p> <p>Much of the lot slopes toward Wassataquoik Stream, affecting roads, harvests, and visual management.</p>	<ul style="list-style-type: none"> Pursue deeded access to the parcel should the opportunity arise.

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Allocations for Millinocket Forest Lot

The following “allocations,” as shown on the Dominant Use Allocations map on page 147, define general management objectives and direction for specific areas within the Unit. See Appendix C for a description of designation criteria and management direction for the various allocation categories.

Wildlife Dominant

- A riparian buffer of 330 feet around MDIFW mapped waterfowl and Wading Bird Habitat in the western and central sections of the Parcel—one primarily along Sandy Stream and one primarily around Mud Brook Flowage.

A secondary Timber Management allocation is also designated for the riparian buffer, subject to wildlife, recreation, and visual concerns.

Developed Recreation Dominant

- A 16.5 foot buffer on each side of the Millinocket to Matagamon snowmobile trail.

Visual Consideration

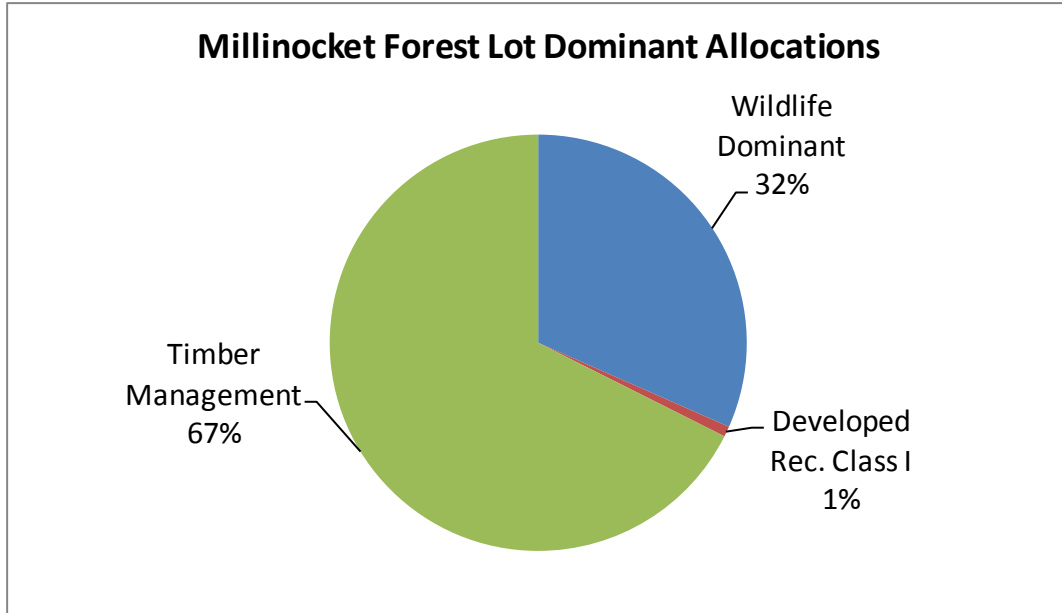
- A Visual Class II status is given to the Lot due to its visibility from Katahdin.

Timber Management Dominant

- All areas not allocated above are Timber Management Dominant.

Millinocket Forest Lot Allocations

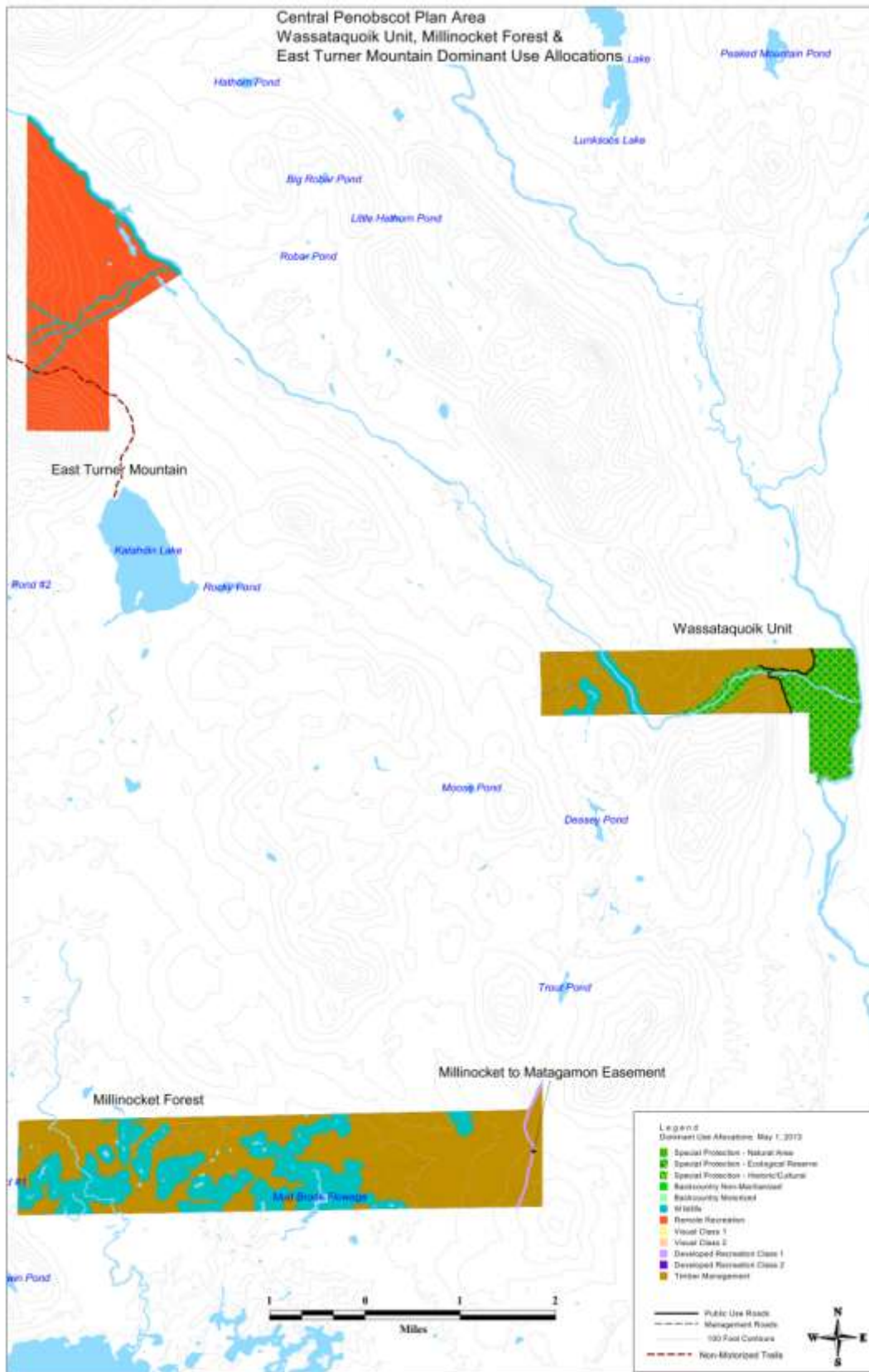
Allocation	Number of Acres	
	Dominant	Secondary
Wildlife	1,610	Not applicable
Developed Recreation Class I	40	Not applicable
Timber Management	3,440	1,610
Note: acreages are representations based on GIS metrics rounded to the nearest 5 acres, and do not sum to the acreages by parcel due to measuring error and limits of GIS precision (above acres are overall high by approximately 1%).		



Millinocket Forest Lot Issues/Opportunities and Recommendations

Management Issues/Opportunities	Recommendations
<p><u>Motorized Recreation</u> The lot has been identified as a possible location for ATV trail development, and possible ATV loops, pending road access or trail access via adjacent landowners.</p>	<p>Consider development of ATV trails on the lot, should road access or trail development on abutting lands provide such an opportunity.</p>
<p><u>Timber Management</u> Long-term decisions will focus on determining the direction of the predominantly young stands on the lot, with most potential interventions not occurring until after this planning period. Any earlier interventions will hinge on ease of access.</p> <p>A decision will also need to be made regarding the future of the Red Pine-White Pine Forest on the lot, with the options to allow natural regeneration to move the stand composition toward spruce-fir-pine or to seek to regenerate red pine through harvesting.</p>	<ul style="list-style-type: none"> As resources permit, monitor the growth and species mix of the younger stands on the lot. Surveys will seek to confirm preliminary plans for future management that favor softwoods east of Sandy Stream, and that aim for a mixedwood forest with a considerable hardwood component west of Sandy Stream. As resources permit, perform more complete assessment of stand conditions in the Red Pine-White Pine Forest to determine whether to favor red pine with shelterwood harvests or to allow natural regeneration to proceed and thereby favor regeneration of spruce and fir and the white pine component.

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Allocations for Seboeis Plantation Parcel

The following “allocations,” as shown on the Dominant Use Allocations map on page 151, define general management objectives and direction for specific areas within the Unit. See Appendix C for a description of designation criteria and management direction for the various allocation categories.

Wildlife Dominant

- The lot shall have a riparian buffer of 330 feet on each side of the West Branch of Seboeis Stream, and the larger wetlands containing “high value” Inland Waterfowl and Wading Bird Habitat.

A secondary Timber Management allocation is also designated in riparian buffer areas, subject to wildlife, recreation, and visual concerns.

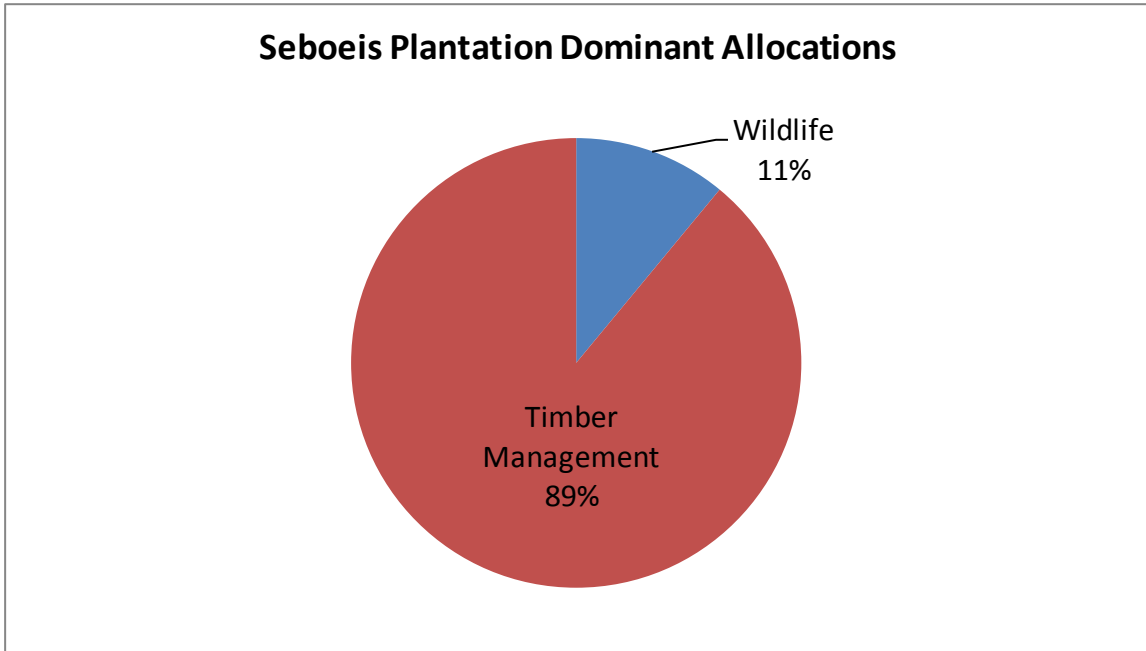
Timber Management Dominant

- All other areas not described above.

Allocations for Seboeis Plantation

Allocation	Number of Acres	
	Dominant	Secondary
Wildlife	130	Not applicable
Timber Management	1,020	130

Note: acreages are representations based on GIS metrics rounded to the nearest 5 acres, and do not sum to the acreages by parcel due to measuring error and limits of GIS precision (above acres are overall high by approximately 1-2%).



Seboeis Plantation Issues/Opportunities and Recommendations

Management Issues/Opportunities	Recommendations
<p><u>Timber Management</u> This lot holds fine land for growing valuable spruce and pine, along with other softwoods. Some acres are also sufficiently fertile to produce quality hardwoods. It is also important because it represents much of the tall forest acreage in this part of the township, which must be considered in management decisions.</p> <p>Access has been from the north in the past, and there may be some issues created by the several changes in abutter ownership, though the 2010 harvest presented few problems in this regard.</p> <p>The loss of deer winter cover on the abutting lands has focused deer use on the public lot in the past, despite the lack of truly good cover.</p>	<ul style="list-style-type: none"> • Look for opportunities for deeded access to the lot. • Where softwood stocking is high and trees vigorous, harvesting should retain areas of high canopy closure wherever feasible, to maximize deer cover.

Allocations for T3 R9 NWP (Grey Ledge Deadwater)

The following “allocations,” as shown on the Dominant Use Allocations map on page 151, define general management objectives and direction for specific areas within the Unit. See Appendix C for a description of designation criteria and management direction for the various allocation categories.

Special Protection

- A riparian zone of 330 feet on each side of the East Branch of Seboeis Stream and Cedar Brook for the “Unpatterned Fen Ecosystem” — an exemplary plant community.¹⁴

Timber Management Dominant

- All areas not designated Special Protection.

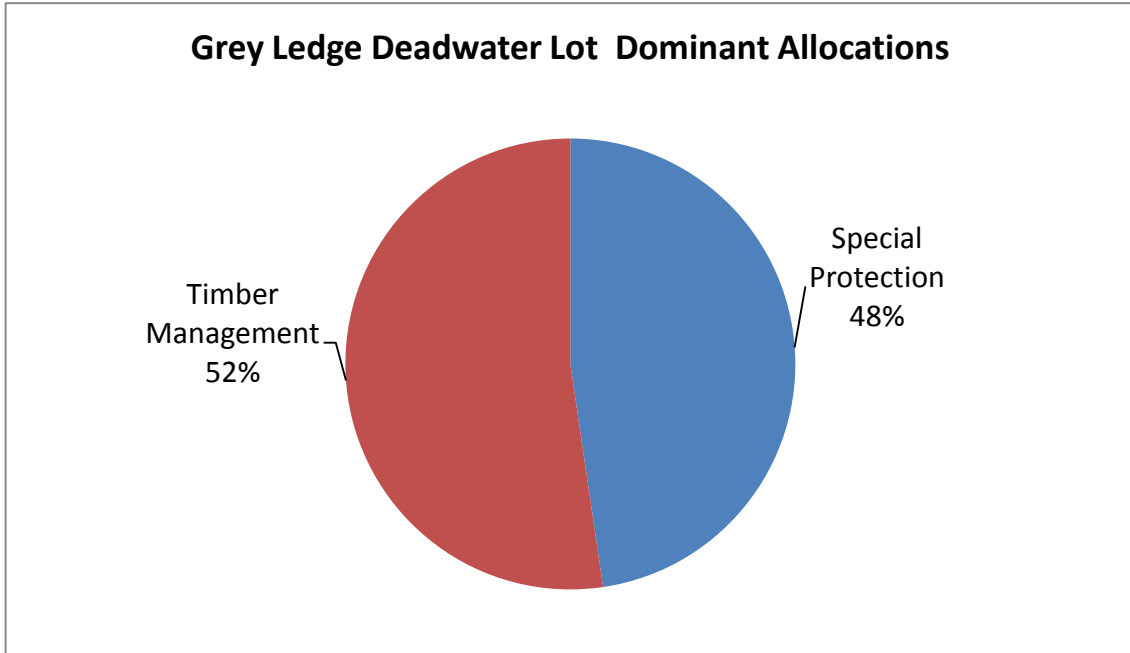
¹⁴ A Wading and Waterfowl Bird Habitat area is wholly within the exemplary plant community.

Central Penobscot Region Plan – Resources, Issues and Recommendations

T3 R9 NWP (Grey Ledge Deadwater) Lot Allocations

Allocation	Number of Acres	
	Dominant	Secondary
Special Protection	450	Not applicable
Timber Management	495	Not applicable

Note: acreages are representations based on GIS metrics rounded to the nearest 5 acres, and do not sum to the acreages by parcel due to measuring error and limits of GIS precision (above acres are overall low by approximately 1-2%).



T3 R9 NWP (Grey Ledge Deadwater) Issues/Opportunities and Recommendations

Management Issues/Opportunities	Recommendations
<p><u>Timber Management</u> With only about 600 regulated acres and three separate access points, harvest planning must be done carefully to ensure economic efficiency.</p> <p>The large wetland complex and abundant riparian buffer acres make wildlife considerations especially important. The abutting lands have mostly had heavy cutting during the past 25 years, especially to the west and north. This makes the better stocked public lot a key feature at the landscape scale.</p>	<p>Continue timber management in line with general objectives and consistent with the IRP.</p>

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Allocations for the Bradford/LaGrange Lot

The following “allocations,” as shown on the Bradford/LaGrange Dominant Use Allocations map on page 154, define general management objectives and direction for specific areas within the Unit. See Appendix C for a description of designation criteria and management direction for the various allocation categories.

Wildlife

- Riparian buffers of 330 feet around wood turtle¹⁵ streams, and around creeper¹⁶ and brook floater¹⁷ streams.
- The portion of deer wintering area and the Inland Waterfowl and Wading Bird Habitat located at beaver flowages along a tributary of the Dead Stream that is located in the northeast section of the Parcel.
- Riparian buffers of 330 feet around other streams and all low wet areas.

A secondary Timber Management allocation is also designated for the deer wintering areas, IWWB habitat, and riparian buffers, subject to wildlife, recreation, and visual concerns.

Timber Management Dominant

- All other forested acres except those along the public roads.

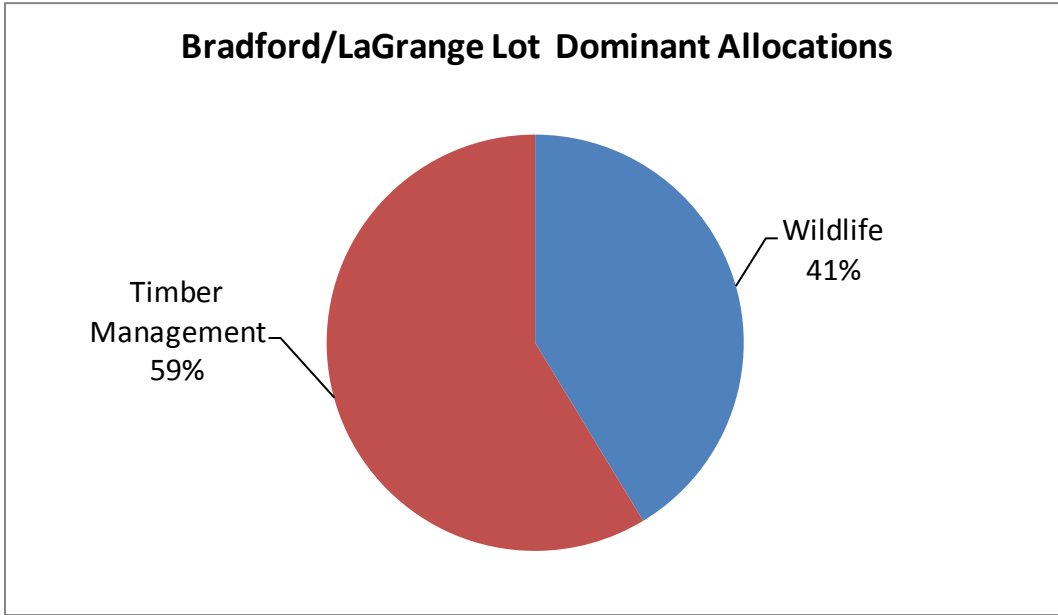
Bradford/LaGrange Lot Allocations

Allocation	Number of Acres	
	Dominant	Secondary
Wildlife	830	Not applicable
Timber Management	1,180	830
Note: acreages are representations based on GIS metrics rounded to the nearest 5 acres.		

¹⁵ This turtle species is listed as globally vulnerable (‘G3’) by NatureServe.

¹⁶ A rare freshwater mussel listed as Special Concern.

¹⁷ A rare freshwater mussel listed as State Threatened in Maine and globally vulnerable (‘G3’) by NatureServe.



Bradford/LaGrange Lot Issues/Opportunities and Recommendations

Management Issues/Opportunities	Recommendations
<u>Riparian Habitat</u>	<ul style="list-style-type: none"> • The Bureau will follow Maine Department of Inland Fisheries and Wildlife’s guidelines for riparian management around wood turtle streams in the Parcel. These guidelines include: maintaining a 330-foot wide forested riparian management zone for 2.5 miles upstream and 2.5 miles downstream of any documented occurrences; maintaining an “un-harvested buffer” within 25 feet of the waterway; managing the remainder of the riparian management zone using single-tree or small group-selection cuts to maintain 60-70 percent canopy cover; and, avoiding and minimizing road construction and log landings in the riparian management zone. • The Bureau will conduct sound riparian management, as outlined for the wood turtle above, in locations where the creeper, a rare species of freshwater mussel, occurs.
<u>Timber Management</u>	<ul style="list-style-type: none"> • The focus of timber management will be management of conforming softwood to deer wintering areas.
<u>Invasive Plant Management</u>	<ul style="list-style-type: none"> • The Bureau will remove the stems of the Japanese barberry if found in the southwest portion of the parcel.

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