

## IV. Resources and Management Issues for Lands in the Upper Kennebec Region

### General Management Focus

The Bureau’s overall management focus for the Upper Kennebec 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.

Over 91 percent of the Public Reserved Lands addressed by this Plan (excepting the Holeb Unit’s No. 5 Bog Ecological Reserve and Attean Pond north and south shore lands) are forested. Of those forested lands over 90 percent are regulated acres — those areas which the Bureau manages to yield a sustained flow of forest products and to improve the quality of the forest resource. The table below summarizes the forested and regulated acres for the larger management Units in the Upper Kennebec Region and for the smaller lots combined into groups.

<b>Summary of Forested and Regulated Acres in the Upper Kennebec Region</b>							
<b>Management Unit(s)</b>	<b>Total Acres</b>	<b>Forest Acres</b>	<b>Regulated Acres</b>			<b>Unreg. Acres</b>	
			<b>Total</b>	<b>HW</b>	<b>MW</b>		<b>SW</b>
Holeb <sup>1</sup>	17,851	16,265	14,396	4,666	5,668	4,062	1,869
Cold Stream Forest	8,159	7,548	5,920	unk	unk	unk	1,630
Bald Mountain	1,793	1,477	1,343	496	418	429	134
Northern Smaller Lots <sup>2</sup>	5,638	5,051	4,826	1,878	1,924	1,024	225
Southern Smaller Lots <sup>3</sup>	5,362	5,143	4,605	2,456	1,488	661	538
<b>Totals</b>	<b>38,803</b>	<b>35,484</b>	<b>31,090</b>	<b>9,496</b>	<b>9,498</b>	<b>6,176</b>	<b>4,396</b>
<b>Percent</b>		<b>91.5</b>	<b>87.6</b>	<b>37.7*</b>	<b>37.7*</b>	<b>24.5*</b>	<b>12.4</b>

1. Excludes the Number 5 Bog ecological reserve (all acres are unregulated) and all lands on Attean Pond.

2. Includes Sandy Bay, Dennistown, Moose River and Bradstreet lots and the East Attean portion of Holeb Unit.

3. Includes Coburn Mtn., Johnson Mtn., Moxie Gore, West Forks, The Forks, Caratunk, Pleasant Ridge and Highland Plt. lots

\* percent of regulated acres, excluding Cold Stream Forest, for which regulated acres by type have not been determined.

Key: HW = hardwood, MW = mixedwood, SW = softwood

Timber harvests on the Public Reserved Lands in the region will supply forest products to local mills and be a source of employment for loggers, truckers, road construction, and others in related businesses. Timber harvests will also be an important source of timber revenue to support the Bureau's management program. 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.

Additional details on forest stocking and sustainable harvest levels in the overall Plan area are provided in Appendix D.

## **Holeb Unit**

The following provides background information on the Holeb property, including the general character of the land base; geologic and ecological resources and natural communities; wildlife resources; historic and cultural resources; recreation and visual resources; and timber resources. This is followed by a summary of the key management issues and opportunities that the Plan will seek to address through the Vision, resource allocations and management recommendations for the unit, which conclude the section.

### *Character of the Land Base*

The Holeb Unit is in Holeb, Attean, T5 R7 BKP WKR, and Bradstreet Townships in Somerset County, west of Jackman (see Map Figure 1). The Unit is approximately 23,600 acres in size.

The majority of the Unit's acreage is contained in the western section, a large contiguous block of forestland comprising a majority of Holeb Twp. and additional acreage in the adjoining west side of Attean Twp. The terrain in this part of the Unit is generally hilly, outside of wetland areas, with hills rising 300-400 feet above the surrounding terrain. A higher prominence along the south boundary of the unit rises to about 2,300 feet, about 1,000 feet higher than the Moose River flowing to the north. Several ponds are scattered across the Holeb Twp. portion of the Unit. Although the land is predominantly forested, there are extensive wetlands south and west of Holeb Pond surrounding Holeb Stream and Moose River, and smaller wetlands scattered elsewhere. These lands were managed as commercial timberland for a number of decades before state ownership began in the 1970s and 80s. Most of the forests have been harvested by the Bureau during the past 30 years.

The Unit also includes the original public lot on the east shore of Attean Pond and a smaller adjoining original public lot in Bradstreet Twp., totaling about 1,160 acres. The pond frontage and much of the Attean lot is rocky, interspersed with brooks and wetland areas.

In 1994, the Bureau acquired most of the lands on the north and south shores of Attean Pond, totaling over 700 acres, along with a strip along both sides of the Moose River in Attean Twp., comprising about 100 acres. These are mainly narrow buffer strips, 300 feet wide on the south side of Attean Pond, 250 feet along the Moose River, and up to about 1/3 of a mile wide on the north side of Attean Pond. A Canadian Pacific Railroad track traverses the north shore buffer strip within a 100-foot wide right of way owned by the railroad, and continues across the Holeb Twp. portion of the Unit, passing close to the Holeb Pond shoreline.

The last major addition to the Unit was the 4,511-acre No. 5 Bog acquisition in 2009, which also included 85 acres on the Moose River near Holeb Falls in T5 R7. Much of the No. 5 Bog property is classified as wetland; about one-third is forest.

Adjacent landowners are Carrier Timberlands to the north and west, the Passamaquoddy Tribe to the west, The Nature Conservancy to the south, and Weyerhaeuser to the east and southeast. A few small private landowners are abutters in the town of Jackman, to the east.

### Natural Resources

#### **Natural Communities**

The Holeb Unit supports mature forest characteristic of the region with hardwoods dominating on gentle slopes and softwoods occupying lowland forest and thin-soiled slopes and ridges. Forest stand types include a balanced mix of softwoods, mixedwood, and tolerant hardwoods, with smaller amounts of intolerant hardwoods, cedar, and aspen. Multiple uncommon and notable upland and wetland habitats have been documented in the Unit, as described below.

Holeb Stream flows south out of Holeb Pond (although flow may be reversed at time of high flow), joining the Moose River after a few miles. The Moose River then follows a meandering loop southward and eastward across the Holeb Twp. portion of the unit, winds south of the No. 5 Bog complex, before turning north and flowing into Attean Pond. A number of small streams flow into Holeb Pond and the Moose River. The Moose River is classified by the Department of Environmental Protection (DEP) as a “Class A” river based on the high quality of the water and associated natural habitat, with regional natural and recreational resource significance.

#### **Uncommon and Exemplary Natural Communities and Rare Plant Species**

Maine Natural Areas Program (MNAP) completed ecological surveys on the Holeb Unit between 2010 and 2016, which identified nearly a dozen rare or notable natural communities and three rare plant species. (A full Natural Resource Inventory Report addressing the BPL lands in the Upper Kennebec Region, excerpted here, is available from MNAP.)

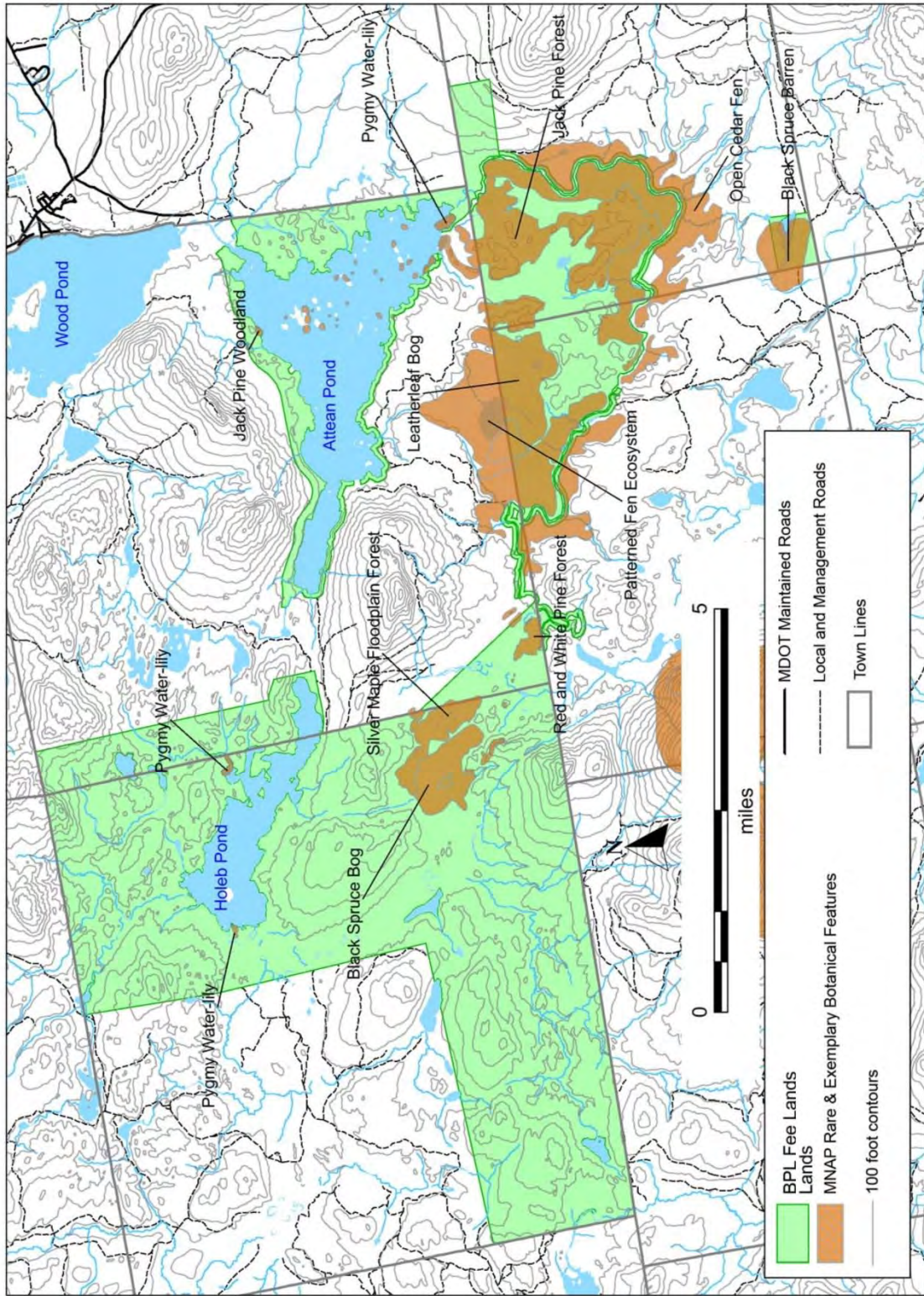
No. 5 Bog is one of the largest, most diverse, and least disturbed peatlands in the Eastern U.S., with exemplary examples of several wetland types including a patterned fen ecosystem and open cedar fen community. It is a designated National Natural Landmark and was designated by BPL as an Ecological Reserve to protect these exemplary natural communities within the bog and an adjacent Jack Pine stand (the largest such inland stand in the state).

Several small Red Pine Woodlands (an uncommon natural community type) have been identified on knolls within the western section of the Unit. Along the Moose River and above Holeb falls, several important wetland communities were identified. These include Hardwood River Terrace Forest, an uncommon wetland type, and an exemplary Spruce-Larch Wooded Bog. Two rare plants associated with cedar swamps were found within the unit: swamp-fly honeysuckle (*Lonicera oblongifolia*) and sparse-flowered sedge (*Carex tenuiflora*).

Map Figure 2 depicts exemplary natural communities identified by MNAP. (Fact sheets on Maine’s natural community types are available at <http://www.maine.gov/dacf/mnap/features/commsheets.htm>.)



# Holeb Unit - MNAP "Rare and Exemplary" Features



MAP FIGURE 2.

### Wildlife and Fisheries Resources

Most of the Holeb Unit is within the Moose River Focus Area of the Maine Wildlife Action Plan, one of 140 such areas of statewide ecological significance identified by state biologists. These areas support rare plants, animals, and natural communities; high quality common natural communities; significant wildlife habitats; and their intersections with large blocks of undeveloped habitat.

No species on the federal or state threatened or endangered lists are known to be present on the Holeb Unit. However, several species of rare or protected wildlife have been recorded. Bald eagle (delisted under the Endangered Species Act, but still federally protected under several statutes) nest near the shore of both Holeb and Attean Pond. Three species designated Special Concern in Maine have been found at Holeb: wood turtle, whose primary habitat is freshwater rivers and streams, have been recorded from several locations along Moose River; a great blue heron nesting colony has been recorded near Barrett Pond (although the colony was not active when surveyed in 2011); lastly, the Quebec emerald, a rare dragonfly whose primary habitat is bogs and fens, occurs at No. 5 Bog. Northern long-eared bat, federally listed as threatened, may be present, based on Maine Wildlife Action Plan habitat maps for the species.

The bog as well as other wetlands on the Unit are considered important inland waterfowl and wading bird habitat. There are several mapped deer wintering areas located on the Unit, in the Loon Pond area, along the Moose River, as well as on the Attean east shore and Bradstreet Twp. parcels. Portions of the Barrett Brook drainage, south and west of the Moose River, have had considerable historic use as deer wintering areas, though recent surveys have found only modest use and that all near where the brook joins the river. Map Figures 3 and 4 depict the Important Wildlife Features of the west and east sections of the Holeb Unit, respectively.

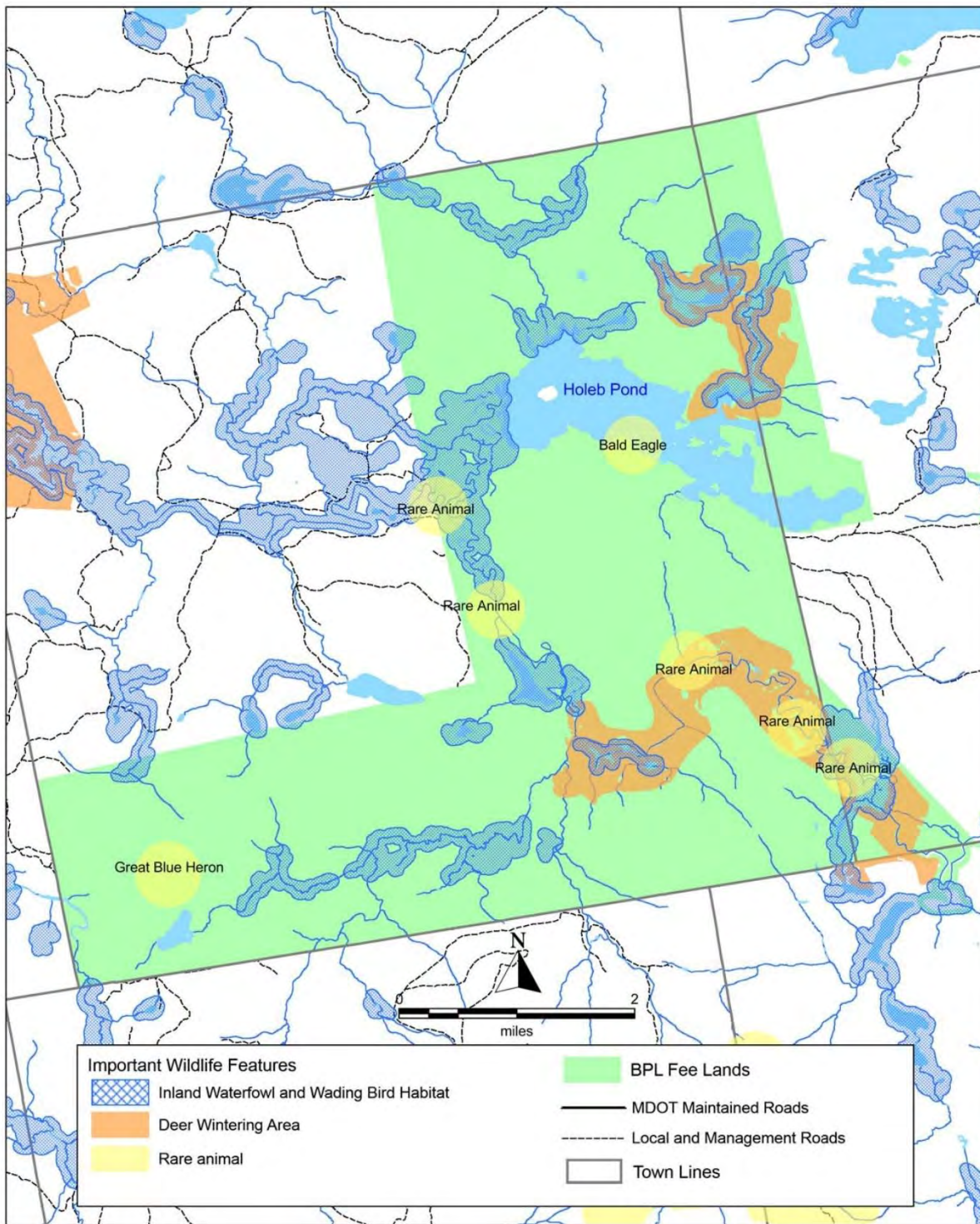
The lower-elevation softwood forest (mainly spruce and pine) may be utilized by a number of coniferous forest specialist bird species such as black-throated green warbler. The mixedwood forests, most on lower ground, and hardwood forests, generally on somewhat higher ground, are home to a wide variety of passerine bird species (e.g., black-capped chickadee, black-throated blue warbler, white-throated sparrow, cedar waxwing), and other common wildlife such as porcupine, snowshoe hare, moose, white-tailed deer, black bear, ruffed grouse, and red squirrel.

In addition to Attean and Holeb Ponds, the Unit includes several smaller ponds up to 37 acres in area. LURC (now replaced by LUPC), in the 1987 Wildland Lake Assessment, gave Attean Pond an “outstanding” fisheries rating and Holeb and two smaller ponds were rated “significant.” In addition, Attean and Holeb Ponds were classified as having “statewide significance” in recognition of the fishery and other natural values present. The table below summarizes the available fisheries-related and LURC assessment data on the ponds within the unit.

Both Holeb and Attean Ponds are noted for their cold-water fisheries as well as their scenic character and relatively undeveloped shorelines. Brook trout are present in most of the ponds on the unit as well as in the Moose River and its tributaries and possibly other streams. Attean, Cedar and Barrett Ponds and Long Bog are classified by MDIF&W as State Heritage Fish Waters. The principal fisheries at both Attean and Holeb Ponds also include landlocked salmon, and at Holeb, splake; Yellow perch are present in both ponds. Angling on the Unit is regulated

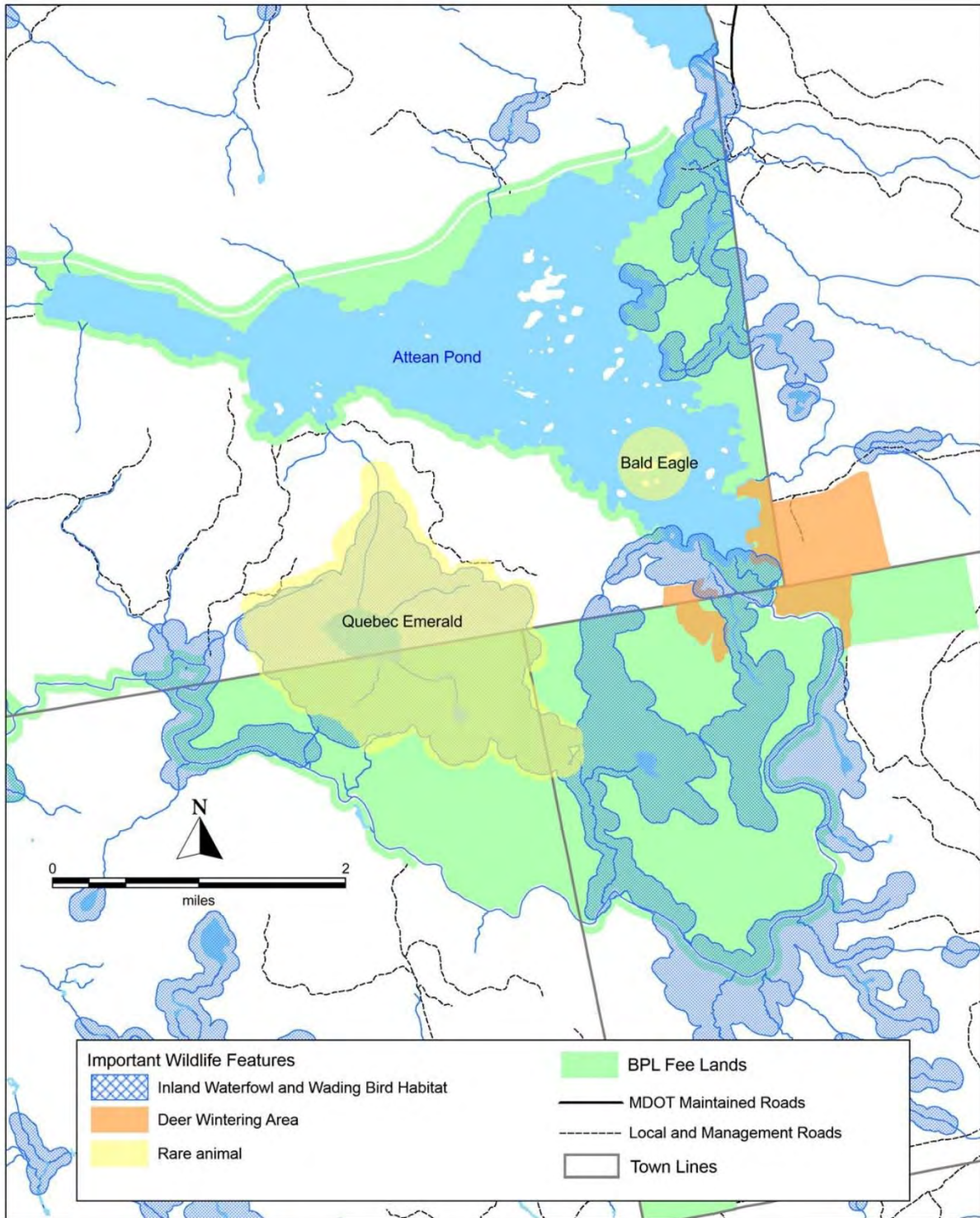


## Holeb Unit - Western Section Important Wildlife Features



MAP FIGURE 3.

## Holeb Unit - Eastern Section Important Wildlife Features



MAP FIGURE 4.



by MDIF&W; special rules are in affect for each of the ponds. Loon Pond, Cedar Pond and Long Bog are zoned as “remote” by LUPC; public vehicle access is permitted no closer than a half mile to a Remote Pond by LUPC regulations.

<b>Physical and Fisheries Data on Lakes and Ponds within the Holeb Unit</b>						
<b>Water Body</b>	<b>Size (acres)</b>	<b>Max. Depth (feet)</b>	<b>Principal Fisheries (see key)</b>	<b>Stocked? (Y/N)</b>	<b>LURC Fisheries Rating (see key)</b>	<b>LURC Resource Class (see key)</b>
Attean Pond	2,745	55	BT, LLS	Y	O	1A
Holeb Pond	1,055	52	BT, LLS, SP	Y	S	1A
Loon Pond	37	10	BT	Y	S+	2
Barrett Pond	34	6	BT*	N	S	2
Long Bog	19	No data	BT	N	NA	3
Cedar Pond	4	No data	BT	N	NA	NA

Sources: Maine Lakes: Geographic & Morphometric Information (MDEP/MDIFW, 2010), Maine Wildlands Lake Assessment (LURC, 1987); Lake Survey Maps (MDIF&W, various dates).

Key to Principal Fisheries

BT = brook trout (\* = State Heritage Fish Water), LLS = landlocked salmon, SP = splake.

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.

Detailed mapping of rare, threatened or endangered wildlife and rare or exemplary plants and natural communities on the Holeb Unit and the surrounding region is available from the Beginning with Habitat program (on online map viewer is available at <http://www.beginningwithhabitat.org/>)

Historic and Cultural Resources

The Moose River and the large lakes in the plan area are part of historic Native American canoe routes, connecting other parts of the northeast to Moosehead Lake and Mount Kineo. Native Americans camped on the several sand beaches on Holeb Pond and Attean Lake while traveling through the area.

Before the 1989 plan was prepared, a small cemetery with headstones dating from the mid-1800s was located just to the east of the intersection of Holeb Stream and the Moose River. The site has been protected since that time. Due to its location, high on the riverbank, it is not easily seen and so is likely unnoticed by most paddlers. The site is not marked or maintained by the Bureau.

Access

Vehicle access into the Holeb Twp. portion of the Unit is available via Holeb Road, which arcs westward from US 201 across Dennistown and Forsyth Townships. Holeb Pond Road branches off from Holeb Road at the northwest corner of the Unit, and terminates at Holeb Pond Landing (AKA, Turner Beach) at the west end of the pond (see Map Figure 5). Holeb Road is a private road maintained for timber harvesting needs and may require a high clearance or 4WD vehicle to use at times. Similarly, Holeb Pond Road is not maintained by the Bureau to public use road



standards and may not be suitable for use by standard vehicles. Several miles of management roads branching off that road remain open to vehicles. Camp owners on privately owned Birch Island within Holeb Pond use Holeb Landing to get to their camps.

Vehicle access to Attean Pond is via Attean Landing Road from US 201, which terminates at Attean Landing, an unimproved boat access site. It is a town-maintained public road to a point about 0.6 miles from the entrance of the Unit at the Jackman/Attean Twp. line and 0.9 miles from the landing. There is a gate and a parking area at the end of the town road. The gate is typically closed only during the spring mud season. The Bureau does not appear to hold a right of way for public access beyond the gate, with the exception of the 900 foot section immediately east of the town line, on which the state retained a right of way when the underlying parcel was sold in 1990. However, BPL has shared maintenance costs for the road over the years with the abutter.

Attean Landing is the site of intensive activity in the summer months. The limited parking space is shared by the public (including Bow Trip paddlers, other campers and day users) and Attean Lodge, which ferries clients to their facility on Attean's Birch Island from a seasonal dock they maintain at the landing. Competition for parking space is high during peak use periods, and is increased during periodic high water events (following heavy rains) that flood the lower part of the landing. Several years ago, the Bureau developed 8-10 additional roadside parking spaces a few hundred feet up the road from the landing. Even so, parked vehicles and trailers sometime overflow onto undesignated areas further from the landing and on the abutting properties.

Two private roads, Spencer Road and Spencer Rips Road, provide access to the Moose River and south margin of No. 5 Bog Ecological Reserve from US 201. Spencer Road continues west from US 201, and connects to other private roads that approach the boundary of the Unit from the south. Spencer Road is a major haul route and is generally maintained to a high standard. Spencer Rips Road primarily crosses TNC property and is maintained by TNC and other abutting landowners. The State has easements on these roads for management and public access purposes and the Bureau contributes funds and/or materials for the maintenance of Spencer Rips Road.

A number of closed management roads cross the Holeb Twp. portion of the unit, north and south of Holeb Pond; a few management roads are present on the east side of Attean Pond, but are not accessible to the general public due to gated private roads to the east.

### Recreation and Visual Resources

Canoeing and fishing are the top recreational attractions to the Holeb Unit, with the focus of recreation centered on the well-known Moose River Bow Trip, nearly all of which is contained within the Unit. It is reputed to be one of the most popular multiple-day canoe trips in Maine. The 34-mile trip most commonly starts at the Attean Landing. The open water portion of the trip involves paddling the length of Attean Pond, using a 1-mile portage trail to reach Holeb Pond, and paddling the length of Holeb Pond. Boaters exit Holeb Pond at the west end via Holeb Stream, which soon flows into Moose River. They then follow the Moose River on its winding course southward and eastward, eventually returning to Attean Pond, and following the east shore back to Attean Landing. The portage trail is primarily on an easement held by FSM and is

maintained by BPL (the east and west ends are on BPL fee lands also covered by FSM easements). Much of the trail's extensive bog bridging was replaced about 5 years ago. Paddlers have access to more than 20 campsites along the pond shorelines and the Moose River. A number of the pond campsites are within easy reach of paddlers who are not on the Bow Trip but enjoy boat-in camping in a primarily undeveloped and scenic setting. All are primitive campsites with picnic tables, fire rings, and privies.

In 2016, BPL contracted with NFCT to assist BPL with maintenance of the campsites, with the expectation that frequency of maintenance will increase from past years. During the 2016 and 2017 seasons, along with general maintenance, NFCT crews completed extensive rehabilitation of the campsites, including repairing and replacing tables and privies, using materials provided by BPL. In addition, access to campsites was improved with installation of log ladders and stone steps, portage trails were improved with new bog bridging, stone steps, and clearing of vegetation, and new signage was installed at the portages and numerous campsites. NFCT provided a written report to BPL on the Bow Trip accomplishments (NFCT, 2017).



*Bog bridging on the Holeb portage trail.*

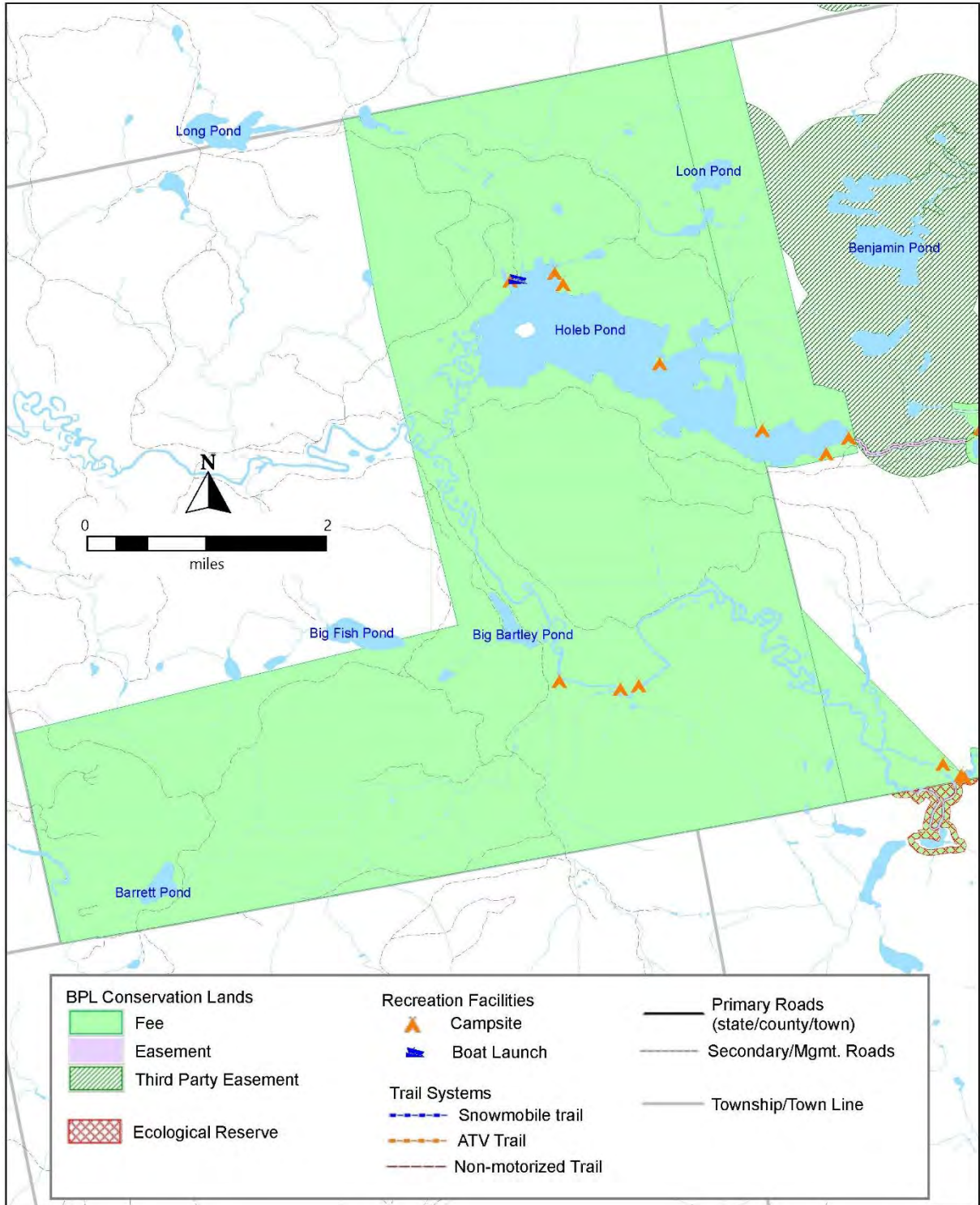


*View across Attean Pond from the landing.*

The only hiking trail on the Unit begins near a campsite on the north shore of Attean Pond and extends north three miles to the top of Sally Mountain, on adjacent private land with a conservation easement held by FSM. The portage and hiking trails, campsites and boat launch sites are depicted on Map Figures 5 and 6. As described above, the Unit's several ponds support native brook trout fisheries, and lake trout are present in one pond. Most of the small ponds have walk-in access only.

The good vehicular access to the Holeb Twp. portion of the Unit makes the area amenable to multiple forms of dispersed recreation such as hunting, sightseeing and wildlife viewing. Pedestrian access provided by logging roads and favorable habitat conditions resulting from timber harvesting practices have made the property popular for hunting game birds, deer, bear

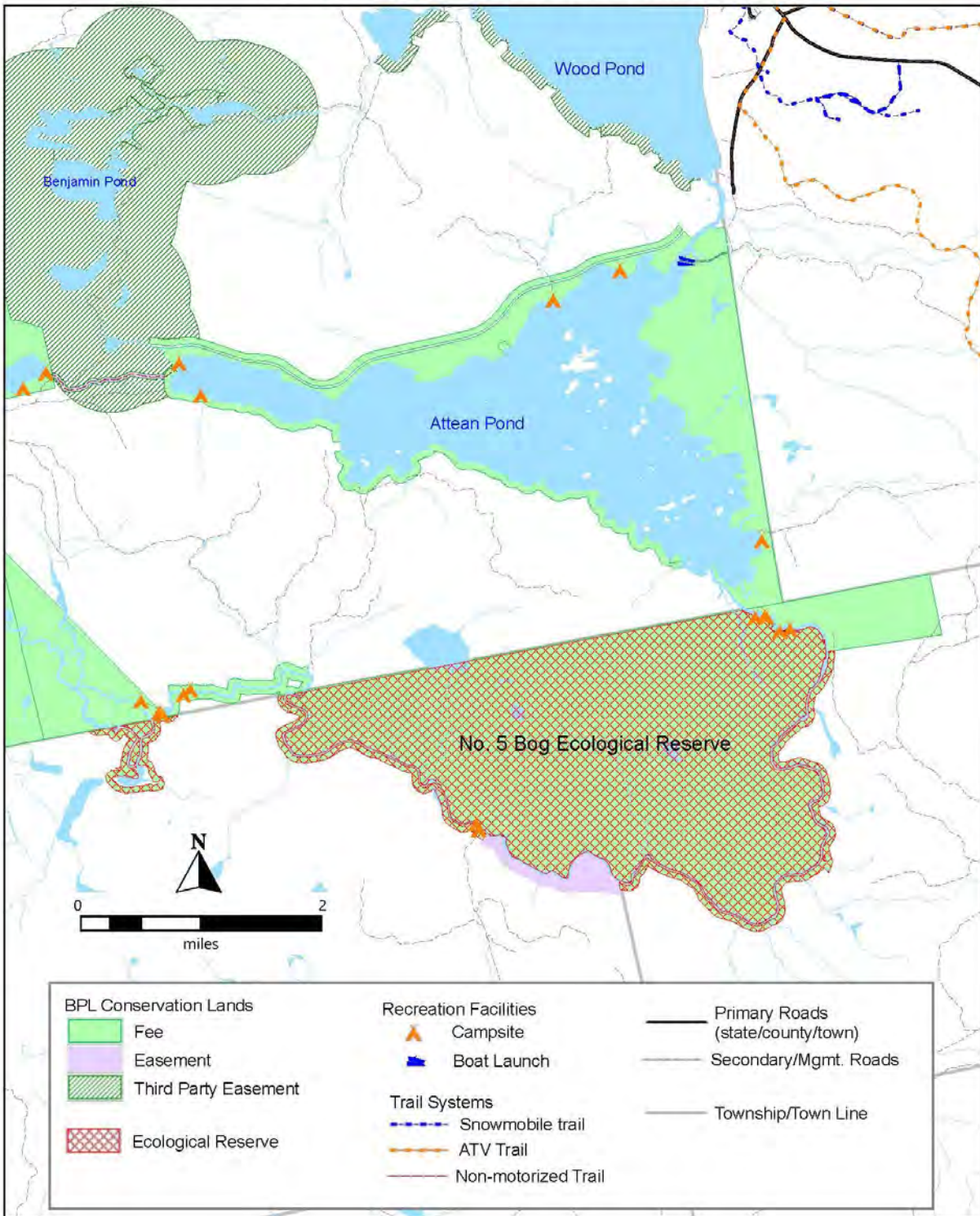
## Holeb Unit West - Holeb Pond and Moose River Roads and Recreation Facilities



MAP FIGURE 5.



## Holeb Unit East - Attean Pond and No. 5 Bog Roads and Recreation Facilities



MAP FIGURE 6.

and moose. The Bureau has designated six bear baiting sites on the unit, which are leased to individual hunters and commercial guides.

There are no designated snowmobile or ATV trails on the Holeb Unit. Camp owners and others may occasionally access the area via snowmobile or ATV on closed and unplowed management roads and by riding snowmobiles across the larger ponds. Management roads open to vehicle traffic are open to ATV use as “shared use” roads.<sup>2</sup>

The primary visual resources on the Unit are the many miles of shorelands surrounding Attean and Holeb Ponds and the riparian zones along the Moose River. The primarily undisturbed forest on those lands is a prominent part of the scenic landscape for boater and anglers.

#### Timber Resources - West Section

The regulated acres on the western part of the Holeb Unit total about 14,236 acres, about 85 percent of the total area. The wetland areas associated with Holeb Stream and Moose River make up most of the unregulated acreage. The most common soils on regulated acres are moderately well to well drained loams, with only a moderate amount of wetter soil area, and generally deep except on steep slopes or the ledge portions on Holeb and Attean. Growth potential is good for quality timber products on most acres, and soils are limiting for roadwork only for summer operations in the wetter portions.

These lands do not have the high elevations of nearby areas, but include frequent abrupt 10 to 40-foot ledge drops that make access and management challenging. These ledges appear most abundant on the northerly Attean Twp. lot, especially its south third. The south Attean Twp. lot holds considerable rough and bouldery terrain, and any management is complicated by the Moose River, which isolates about 300 of this lot’s 500 acres from the remainder of State ownership.

#### **Harvest History**

The previous owner at Holeb had conducted extensive harvests up through the mid-1960s, probably much by diameter limits. The most recent harvests on the northerly Attean parcel probably occurred about the same time, though the south half of this lot seems not to have been treated then. The southerly Attean parcel may not have been harvested since extensive fires regenerated most acres in the early twentieth century.

Bureau timber harvesting at Holeb began early in 1983. Harvest volume through 2014 (the most recent harvest) was about 125,000 cords. Though the tract stocking is 55 percent softwoods, the harvest has been 40 percent softwoods and 60 percent hardwoods (with 90 percent of all hardwood cords being pulpwood/biomass), as the silvicultural objectives were often improvement harvests that favored retention of high quality/value trees, especially spruce and pine.

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<sup>2</sup> Shared use is defined in the IRP as two or more activities using the same trail at the same time. Many gravel roads on the BPL lands will be open to passenger vehicles, ATVs, horses, and/or bicycles. Such roads are to be signed “shared use.”

Harvests occurred mainly in three separate operations, with 7,200 cords produced north of Holeb Pond in the 1980s (and another 5,000 cords in second BPL entries 2012-2013), 28,000 cords from the State-owned portion of Attean Mountain south of Holeb Pond, mostly in 1992-1996 but with 1,700 cords in 1999-2000 as the second series of aspen patch cuts were made. Beginning in 2007, harvests in the Barrett Brook drainage (south and west of the Moose River) have yielded over 78,000 cords while retaining high volumes in the most extensive mature softwood area in the Plan area. About three-fourths of the total volume had been harvested from the Barrett Brook area at the time of the 2011 inventory, and stocking remains high, at over 30 cords per acre.

### **Stand Type Characteristics (regulated acres only) and Current Stocking**

Softwood types cover 6,100 acres, 43 percent of the regulated forest, considerably lower than before the harvesting of mature fir. Most are found on moderately well to well drained sites, with some on excessively drained thin/rocky soils and some on forested wetland soils. These acres are very well stocked, with over 30 cords per acre. Spruce (nearly all red spruce) makes up 54 percent of the volume, pines (about  $\frac{3}{4}$  white,  $\frac{1}{4}$  red) are next with 20 percent, then red maple (8 percent), cedar (6 percent) and fir (3 percent). Lesser amounts of paper and yellow birch, aspens, tamarack, and sugar maple also are found. The spruce is generally excellent quality as is the younger fir, but there is still some older fir that is fairly defective, along with some of the older white spruce. Pines are also of very good quality, with much of the red pine found in the extreme southeast corner of Holeb and on the Attean lots. Quality is limited in cedar and in hardwoods within this type.

Mixedwood types are found on about 4,900 acres, 34 percent of the regulated area. They are found on all sites but the wettest and driest and quality is fair to good. Though not stocked so heavily as the softwood acres, mixedwood type holds about 24 cords per acre. Red maple is the leading species at 30 percent of type volume followed by spruce with 22 percent of type volume, yellow birch is next at 13 percent, then fir at 9 percent, aspens at 8 percent, and both paper birch and sugar maple at 6 percent. Only white pine was tallied in this type, and is 3 percent of stand volume.

Hardwood types cover some 3,236 acres, 23 percent of the regulated forest. They are most often found on gentle to moderate side slopes and on low hilltops, in places with deep and at least moderately fertile soils. The vast majority of hardwood area is dominated by the Northern Hardwood mix — beech, yellow birch, and sugar maple — though here red maple is also a significant component. Spruce and fir and some hemlock also occur in this type. The other distinct association is the intolerant hardwood mix, aspen and paper birch, originating from either fire or past heavy harvests. Total volume in this type is about the same 24 cords per acre as in mixedwoods, with sugar maple, yellow birch, and aspens representing nearly 70 percent of volume, in near equal proportion. Red maple holds 12 percent, and both beech and spruce 5 percent. Overall quality in hardwoods is not as good as most other lots in the Plan area, though fine individual stems of sugar maple, yellow birch, and the occasional white ash may be found. This area has a comparatively rigorous northerly climate compared to those other Plan area lots, and somewhat less fertile soils.



### Timber Resources – East Section

The regulated acres on the eastern part of the Holeb Unit total about 1,113 acres, about 92 percent of the total area. The 850-acre lot (710 regulated) on the east side of Attean Pond includes all of the easterly shoreline of the pond. The shoreline frontage is essentially all rocky, and this rocky character extends throughout most of the lot, interspersed with brooks and wetland areas. Soils are relatively infertile compared to surrounding areas, though capable of growing good quality softwoods and decent aspen and paper birch. The adjacent 360-acre Bradstreet Twp. lot includes over a mile of frontage on the Moose River, with the P-RR zoning along the watercourse holding the 17 acres of unregulated forest. The northwestern quarter is part of a much larger zoned deer wintering area.

(The No. 5 Bog tract in T5 R7 and Bradstreet Townships was gifted to the State as an Ecological Reserve. Though it holds several hundred upland forest acres and considerable forested wetland, these will not be managed for timber. Any potential cutting of trees would be done within the constraints of the reserve designation. Likewise, the north and south Attean Pond shorelands and the Moose River riparian parcel in Attean Twp. will not be managed for timber, given their character and recreation/aesthetic value.)

### **Harvest History**

The Bureau conducted frozen ground timber harvesting on the East Attean lot in 2003 and 2004, with harvest volume almost 5,400 cords. Two-thirds was pulpwood and 81 percent of the pulpwood was aspen, as this short-lived species was strongly targeted. Spruce-fir products made up 15 percent of harvest volume. Of the hardwood sawlogs, 80 percent was aspen and 15 percent paper birch.

A 1991 Bureau harvest on the Bradstreet lot included a number of 5-10 acre full overstory removals on alternate blocks in the burn-origin area, plus selection harvesting in the mixedwood and softwood, producing 3,800 cords, nearly 80 percent hardwoods. An entry in 2003 made a second series of patch cuts in the fire type and yielded a bit over 2,000 cords, 92 percent hardwoods, and included no activity in the mixedwood and softwood.

### **Stand Type Characteristics and Stocking**

Nearly all the forest on the East Attean lot originated from a fire during the first one-third of the twentieth century. About 85 percent of regulated acres are either aspen-paper birch or spruce/fir/pine mixed with aspen-birch, and the aspen-birch component is mature to overmature. The remaining 15 percent is softwood type, dominated by spruce with fir, pines, and some cedar included.

Sixty percent of the forest on the Bradstreet Twp. lot also originated from a fire (circa 1920) and prior to the 1991 Bureau harvest was mature aspen and paper birch plus red maple above long-suppressed fir and spruce. Twenty percent of the regulated forest is softwood type, much older than the fire-origin area, a heavily stocked cedar-spruce stand with scattered tall pines, all in the DWA. Sixteen percent is mixedwood, a well-stocked spruce-hemlock-hardwood stand that had also escaped the fire, on the southwest part of the lot. The current stocking is a mix of older mixedwood and softwood with high stocking, probably near 30 cords per acre, and the fire type

hardwood which is about two-thirds recently (1991 on) regenerated stands with light volume and one-third overmature aspen-birch with declining volumes due to mortality.

### Management Issues, Concerns and Opportunities

The Bureau of Parks and Lands will manage the Holeb Unit for multiple uses including outdoor recreation, wildlife habitat, scenic and natural area protection, water quality protection, and production of forest products. The following discussion summarizes the key management issues and opportunities associated with each of these uses on the Holeb lands.

### **Timber Management**

The majority of the Holeb lands will continue to be managed as a multiple use working forest. The approximately 15,350 acres of regulated forest (14,236 acres in the western section and 1,113 acres in the eastern section) may be allocated to timber management as a dominant or important secondary use. Timber management may be designated as a dominant land use but may also occur as a secondary activity on lands with other dominant resource allocations, such as Remote Recreation or Wildlife Management areas. For example, Wildlife will be the dominant use in riparian buffers and on wetlands and beaver flowages. Access is good throughout the Unit, with development of the forest management road system essentially complete.

Where timber is the dominant use or is included among secondary uses, its management should favor high value (both for timber and wildlife) and species such as spruce, pines, sugar maple, and yellow birch while taking advantage of the fast growing and abundant but shorter lived fir. The objectives will include growing high value timber products, chiefly sawlogs and veneer, while maintaining visual integrity and enhancing the diversity of wildlife habitat and stability of the forest.

West Section of Unit. Spruce and white pine are the key management species in softwood stands, and while fir is less common in the overstory than prior to the-budworm-caused mortality, it's a significant component of the abundant regeneration in this type. BPL practice is generally to manage fir as an intermediate species while culturing the spruce, but here the fir is likely to remain an important minority component at all times. Areas currently in softwoods should usually be managed to stay in the type. Though deer numbers are low even in the good winter cover on this tract, retention of cover integrity remains important should the deer population increase, and makes good silvicultural sense as well. However, a significant portion of the spruce is well within the mature stage, and subsequent entries into this type may include partial overstory removals as well as selection harvests.

Management in mixedwood stands should favor spruce and any pine, the birches, and sugar maple. Red maple varies greatly in quality, and the better trees should be retained when feasible while species proportion is lowered by targeting the lesser quality stems. Fir is a larger component here and is common in regeneration, and can be a valuable intermediate product as it is in softwood type. Some mixedwood acres are on sites better suited to growing spruce, pine, and fir; management should work toward restoring many of these acres to softwood type through preferential harvesting of hardwoods where the younger softwoods are sufficient to take over the site. This should be higher in priority where those softwoods have a strong spruce component, and in areas adjacent to good winter cover.

In the hardwood type, sugar maple and yellow birch are the preferred species along with any spruce, and fir can be managed here as an intermediate product. Any pines or white ash should be favored, along with the better-quality paper birch and red maple. Unlike nearly all other BPL Northern Hardwood areas, beech is a minor part of the stands and seldom of sufficient vigor to produce many beechnuts. Full crowned beech should be retained wherever possible.

East Section of Unit. Access to the East Attean lot is through several miles of abutters' roads, including TNC to the south (since 2009) and Weyerhaeuser to the north and east. These roads will need upgrading for any entry. This limited access plus the winter-only character of the terrain means that future entries will be relatively infrequent and intended to cover much of the regulated acres, for the sake of efficiency. The current even-aged condition of nearly all acres makes this strategy fit the desired silviculture. As the current stands of aspen and paper birch pass out of the picture, management should favor spruce and pine, along with the aspen regenerated by the most recent harvest.

Management decisions on the Bradstreet Twp. lot will include choosing whether to harvest the remainder of the older aspen-birch or retain some of it for structure. This will depend somewhat on how much is still alive and merchantable. The other stands will continue to be managed for multiple age classes.

Visual Concerns. Much of the northern portion of Holeb is visible from Holeb Pond, though the slopes facing the water aren't especially steep, thus maintaining visual objectives has had little impact on harvest practices. Due to the dense forest lining the Moose River, Bureau harvesting has had no effect on visual quality as perceived from the river. However, warm-season operations have been kept at some distance from the water, to lesson any effect of machinery noise on Bow Trip paddlers. Any work done near the East Attean shoreline should retain sufficient forest cover to maintain the visual character as seen from the pond. The lack of steep slopes or high ground mitigates the harvest impact outside of the riparian buffer.

In summary, specific timber management issues and objectives include:

- Management should work to retain/enhance the good quality spruce and pine components,
- Management of mixedwood acres should encourage reversion to softwoods where past harvesting had changed the type,
- Softwood cover should be maintained or enhanced in historic and current deer wintering areas, and
- Manner and timing of timber harvests should be planned to reduce potential adverse impact on recreational users, especially those on Holeb Pond and the Moose River.
- Appropriate management in the Bradstreet Twp. lot DWA, where the Bureau ownership is but a small percentage of the zoned area.
- Deciding whether to make a third set of patch cuts in the fire type of the Bradstreet Twp. lot or whether to allow these acres to collapse naturally.

### **Wildlife and Habitat Protection**

As described above, no endangered or threatened wildlife is known to be present on the Holeb Unit. Northern long-eared bat, federally listed as threatened, may be present. The most



significant wildlife habitats on the unit are within the wetlands and riparian areas. Protection for these areas is typically provided by a Wildlife dominant allocation, based on the “specialized habitat” criteria described in the IRP. On this unit, a large portion of the wetland habitat is contained within the No. 5 Bog, which will be allocated to Special Protection – Natural Area due to the regionally significant ecological resources found there and its designation as an Ecological Reserve. These allocations will provide protection for the Special Concern species enumerated above. MDIF&W protocols for protection of bald eagle nest sites will be followed whenever timber harvesting or other activities are planned for the vicinity of a nest.

In the remaining wetland and riparian areas, the Wildlife allocation would be applied so as to demarcate a 330-foot buffer zone around the great ponds and on each side of the major streams, and a 75-foot buffer zone around wetlands, waterbodies less than 10 acres, and in minor riparian zones. (Minor riparian zones are generally designated around flowing water bodies upstream from the point where such water drains less than 50 square miles.) Any trail construction or other recreational development in these areas would need to be carefully planned to minimize potential impacts to these important habitats. Timber management is allowed in riparian zones to promote wildlife habitat.

### **Recreation Management**

Bow Trip paddlers who arrive at Attean Landing late in the day at the start of their trip sometimes either camp at Sally Beach campsite (half mile paddle from the landing) or (illegally) at the boat launch or town park on Wood Pond in Jackman. Reportedly, some also attempt to camp at the landing, but are kept from doing so by the Attean Lodge employee stationed there during the summer. In order to meet the need for boaters to have a convenient place to camp before beginning the Bow Trip, there may be a need to explore providing a group campsite somewhere near the Attean Landing. The BPL policy to prohibit camping at the landing may also need to be reconsidered, with due consideration of potential impacts on resources and on other visitors, and challenges with managing this use (sanitation, litter, fires, campers extending their stay beyond one night, etc.).

### **Administrative Issues**

#### **Road Access and Maintenance**

Providing for public use of the private Attean Landing Road has been an issue the Bureau has contended with for a number of years. In the spring, the road is sometimes gated at the end of the public way (0.6 miles from the Attean Twp. line and 0.9 miles from Attean Landing) when the public would like to gain access to the pond, after the pond has receded and the annual flooding of the landing and lower road has passed. The Bureau has occasionally shared road maintenance costs over the years with the abutter who owns the first half-mile of the road, and with Attean Lodge. Addressing road access concerns and maintenance needs is complicated by the lack of clarity regarding public access rights.

#### **Attean Landing Commercial and Public Use**

The Bureau has received complaints over the years about Attean Lodge’s commercial use of the Attean landing restricting use by the general public, both for parking and boat launching. There have also been reports that Lodge employees have charged the public to park at the landing. The

Attean Lodge had a five-year lease for use of the landing from 1987 to 1991, which was renewed for one year but has not been renewed since. (The lease specified allowed uses and forbade charging the public.)

The ongoing commercial use of the landing without a lease needs to be addressed and unimpeded public use of the site, including boat access and overnight parking, provided for. The Bureau should consider developing additional parking near the landing, outside the LUPC protected zones, to ameliorate competition for parking space and minimize impacts from parking in unauthorized areas and on abutting property.

In August 2015, LUPC stated that the seasonal residency at the landing by an Attean Lodge employee (in a cabin mounted on a trailer, with no provision for sanitation) is not permitted in the lake protection and wetland protection zones and asked BPL to address this problem. LUPC suggested an alternative site for the trailer up the road, outside the protected zones. A solution to this issue needs to be developed, in concert with the preceding issues.

### **Agricultural Use of Field North of Attean Landing**

The portion of the original Public Lot on the east side of Attean Pond, north of the landing road, includes a hayfield that has been actively cut in recent years. However, there is no agriculture lease on this property, most likely due to past confusion about the ownership of this portion of the lot. If the agricultural use is to continue, a lease is required.

### *Vision for the Holeb Unit*

*Situated within a matrix of other conservation lands of similar extent in the headwaters of the Kennebec River system, the Holeb lands are a special combination of extensive forestlands, nearly the entire shoreland of two large scenic and mainly undeveloped ponds, and a wild river corridor hosting one of the most iconic multiple-day wilderness canoe trips in Maine. In addition, the Unit contains one of the largest and ecologically diverse bog complexes in the region and a major portion of an uncommon large jack pine stand.*

*The Holeb lands will provide a flow of forest products with most of the property managed as a multiple-use working forest for quality timber, respecting wildlife habitat needs and visual quality as perceived from the two major ponds and the Moose River.*

*Protections will be provided with appropriate allocations for sensitive natural resources, such as exemplary natural communities, wetlands and riparian habitats. As required by deed, approximately 20 percent of the unit, encompassing all of the portions of No. 5 Bog and the adjacent jack pine stand in State ownership and portions of the Moose River corridor, will be managed as an ecological reserve.*

*The Moose River Bow Trip will continue to be managed for a primitive backcountry recreation experience, with well-maintained portage trails and campsites along the route. Traditional dispersed recreation activities such as hunting, trapping, and fishing will continue on the Unit.*

### Resource Allocations for the Holeb Unit

The following “allocations,” as shown on Map Figures 6a and b - Holeb Dominant Use Allocations, 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 Areas (Dominant Allocation)**

- An area totaling approximately 4,597 acres comprising the No. 5 Bog Ecological Reserve (consisting of No. 5 bog, the adjacent Jack Pine stand, the adjacent buffer strip along the south shore of the Moose River, and the buffer area along the Moose River south of Holeb Falls, all within T5 R7 and Bradstreet Townships). Backcountry non-mechanized recreation will be a secondary allocation in this area. Motorized boating (typically small motors on canoes or other small craft) is allowed on the Moose River, and these boats are permitted to land on these areas; however, motorized boat launching and other land-based motorized activities are not allowed. Commercial timber harvesting is not allowed.
- A small area including and surrounding the historic cemetery just east of the intersection of Holeb Stream and the Moose River. Commercial timber harvesting that may occur in adjacent areas will avoid this site.

#### **Backcountry Recreation - Non-Mechanized Areas (Dominant and Secondary Allocation)**

- Approximately 1,000 acres along Holeb Stream and the Moose River, encompassing the portions of these waterways in Holeb and Attean Townships (and comprising the remaining flowing water portion of the Moose River Bow Trip not within the Special Protection dominant allocation described above). As on the portion of the Moose River passing through the ecological reserve, motorized boating is allowed and these boats are permitted to land on these areas; however, motorized boat launching and other land-based motorized activities are not allowed. Commercial timber harvesting is not allowed.
- Also as a secondary allocation in the No. 5 Bog Ecological Reserve, with a Special Protection dominant allocation as described above.

#### **Wildlife Management Areas (Dominant Allocation)**

- A total of about 4,730 acres as a dominant allocation in the following areas: (1) the major riparian zone (330 feet) along each side of Holeb Stream and the Moose River in Holeb Twp. not included in the Backcountry – Non-Mechanized allocation; (2) the major riparian zone (330 feet) around the great ponds and along each side of several streams, including Turner Brook and Barrett Brook and their tributaries; (3) the minor riparian zone (75 feet) along the remaining perennial streams and around ponds less than 10 acres; (4) the portions of Inland Waterfowl and Wading Bird Habitat (IWWBH) areas outside the above riparian zones; (5) the designated deer wintering areas (DWAs) in Holeb, Attean and Bradstreet Twps.

Timber Management is a secondary use in the riparian buffer areas, subject to wildlife, recreation, and visual resource concerns.

### **Remote Recreation Areas (Dominant and Secondary Allocation)**

- Remote Recreation would apply as a dominant allocation to the portion of the lands on the north shore of Attean Pond outside the shoreline buffer zone, totaling about 280 acres, as well as to the one acre parcel at Spencer Rips.
- Remote Recreation would apply as a secondary allocation in the riparian areas and DWAs with a Wildlife dominant allocation. Remote Recreation would also apply as a secondary allocation to the remaining area surrounding Cedar Pond and Loon Pond zoned Protection – Remote Recreation (P-RR) by LUPC. (A substantial portion of this P-RR zone is riparian and IWWBH areas and DWAs, with a Wildlife dominant allocation and Remote Recreation secondary allocation, as described above.)

No public access roads and no new motorized trails would be allowed in the areas with a Remote Recreation dominant or secondary allocation. New forest management roads in the P-RR zoned area would be limited to the extent practicable, but may be constructed where access options are limited or where extending an existing road may help reduce impacts of harvesting activity.

### **Visual Consideration Areas (Secondary Allocation)**

- Visual Class I areas (generally areas where foreground views of natural features that may directly affect the enjoyment of viewers) will be defined as a secondary allocation on the ground for areas adjacent to the primary access roads (Attean and Holeb Landing Roads) and areas around the landings and any portions of the great pond and Moose River Bow Trip stream shorelines that may not be adequately protected by Backcountry – Non-mechanized and Wildlife buffers described above.
- Visual Class II areas will be defined as a secondary allocation in areas beyond the immediate foreground, such as background views of forest canopies from ridgelines and background hillsides viewed from public use roads, or interior views beyond the Class I area likely to be seen from a road or the Bow Trip; due to the presence of the Bow Trip route, the slopes of those higher prominences in the south part of Holeb Twp. are included in this allocation.

### **Developed Recreation - Class I Areas (Dominant Allocation)**

- All roads designated for public motor vehicle use (Attean and Holeb Landing Roads).
- The Attean Landing (about 3 acres) and the Holeb Landing (about 2 acres) areas.

### **Timber Management Areas (Dominant Allocation)**

- All other areas not allocated above are designated Timber Management dominant (approximately 12,800 acres); includes a majority of the west section of the Unit and the portion of the east Attean Pond and Bradstreet Twp. lands not including in the Wildlife Allocation. Recreation will be recognized as an important secondary use within the timber dominant allocation.



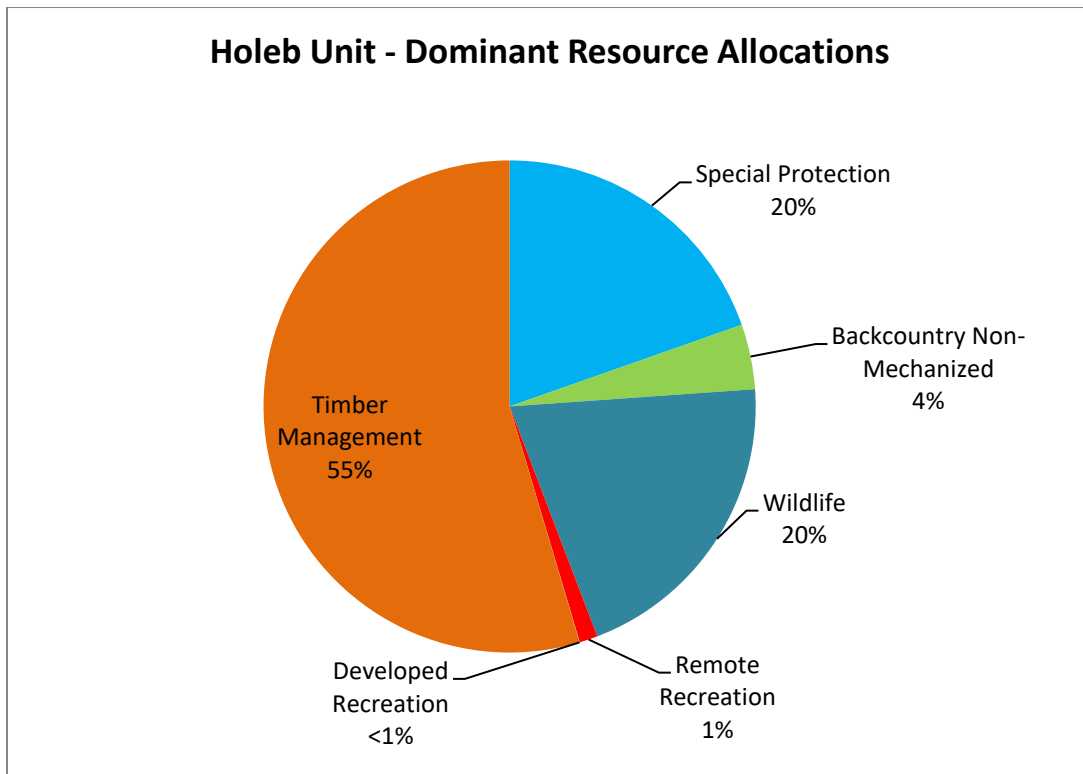
### Summary of Holeb Unit Resource Allocations

Allocation	Number of Acres			%
	Dominant	Secondary*	Total	
Special Protection	4,600	Not applicable	<b>4,600</b>	<b>19.6</b>
Backcountry Non-mechanized	1,000	4,600	<b>5,600</b>	<b>23.9</b>
Wildlife Management	4,730	Not applicable	<b>4,730</b>	<b>20.2</b>
Remote Recreation	280	3,875	<b>4,155</b>	<b>17.7</b>
Visual Consideration – Class I	0	2,225**	<b>2,225</b>	<b>9.5</b>
Visual Consideration – Class II	0	200**	<b>200</b>	<b>&lt;1.0</b>
Developed Recreation – Class I	20	Not applicable	<b>20</b>	<b>&lt;1.0</b>
Timber Management	12,800	2,730	<b>15,530</b>	<b>66.3</b>

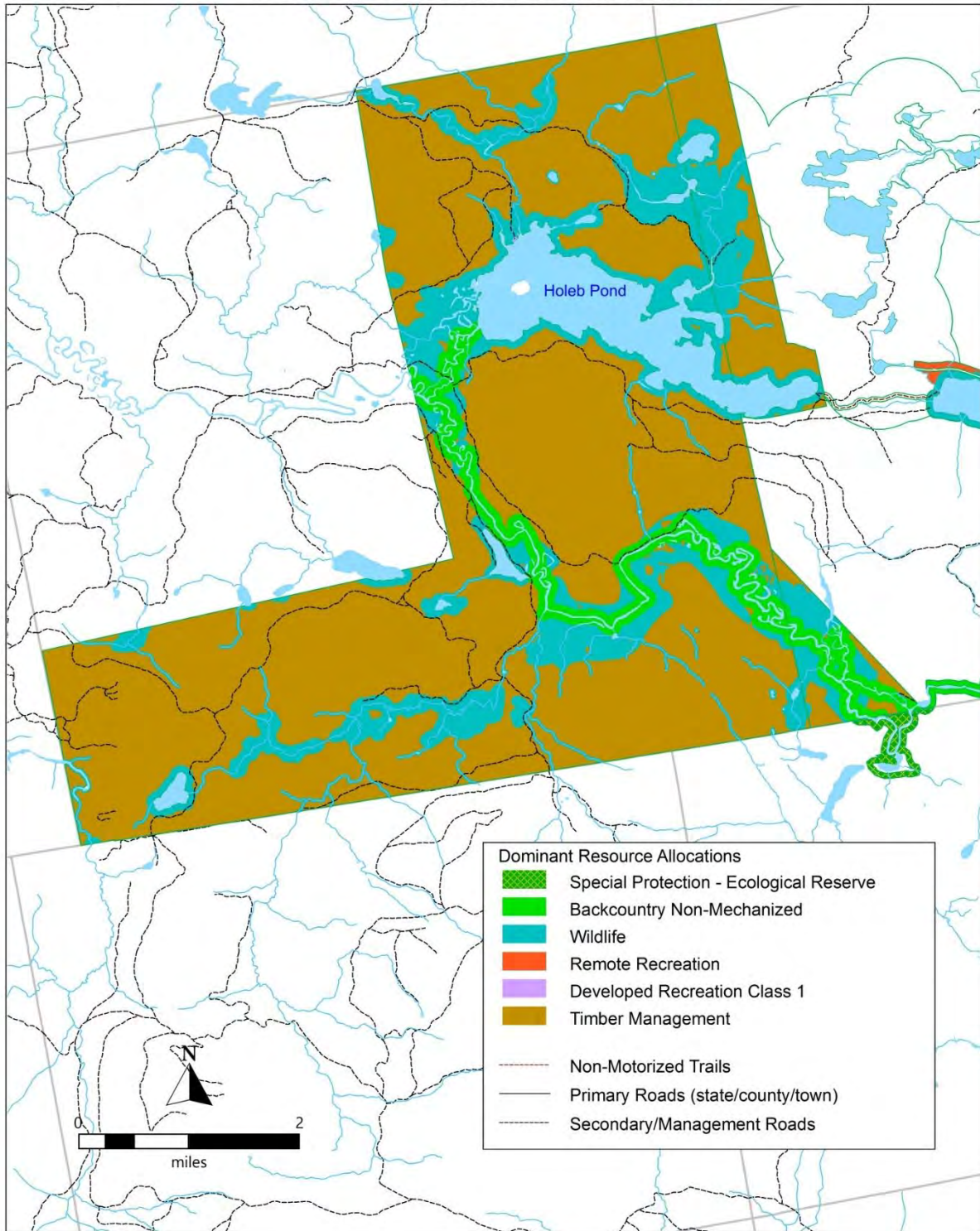
Note: Acreages are representations based on GIS metrics rounded to the nearest 5 acres, and do not sum to the total Unit acreage due to measuring error and limits of GIS precision (above acres are overall low by approx. 1%).

\* Includes both secondary *allocations*, as defined in the IRP and which may restrict certain activities, and secondary *uses*, which specify allowed uses but do not impose restrictions.

\*\*Preliminary estimate, to be refined in the field as part of the forest prescription process.

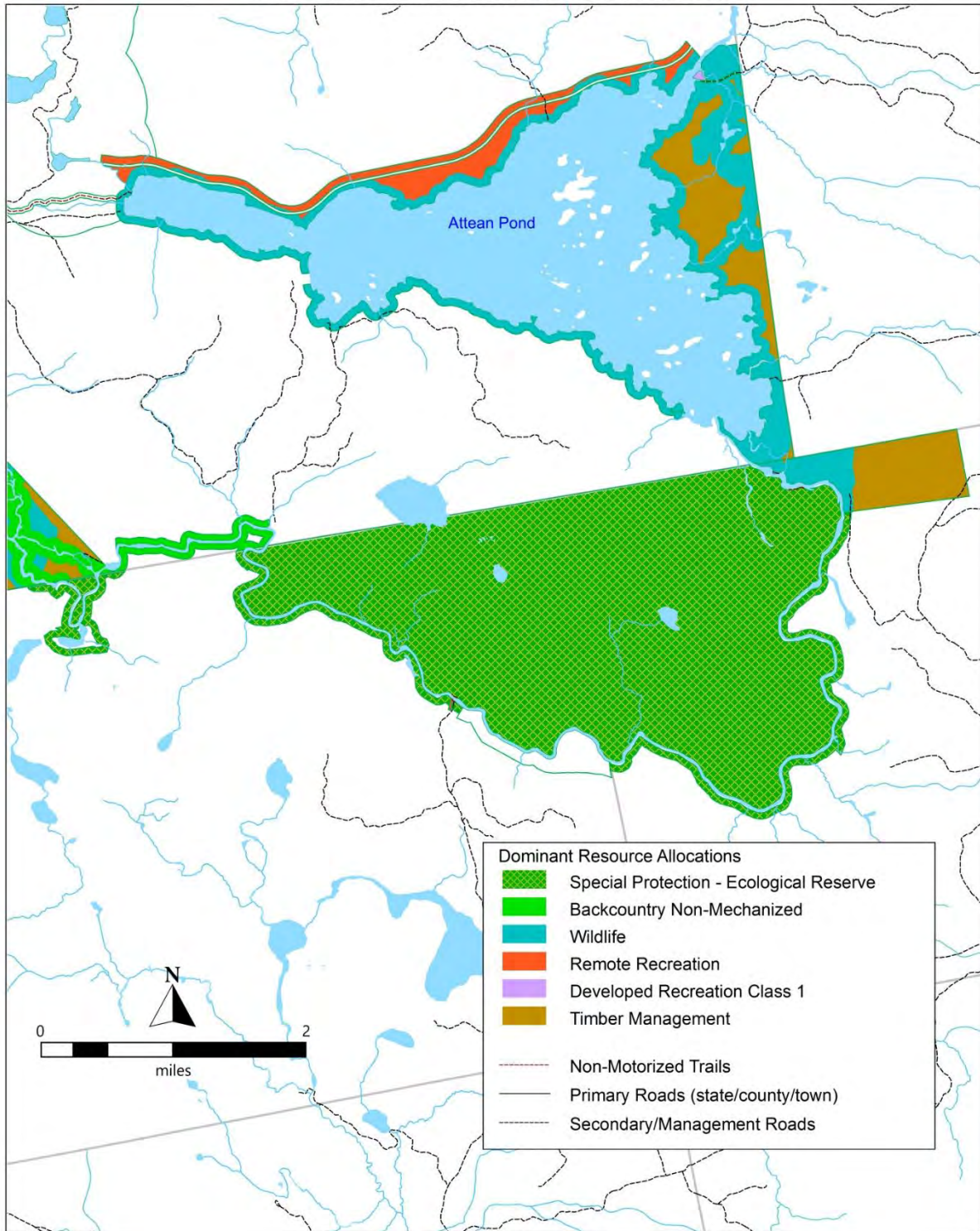


### Holeb Unit - West Section Dominant Resource Allocations



MAP FIGURE 6a.

### Holeb Unit - East Section Dominant Resource Allocations



MAP FIGURE 6b.



## Management Recommendations for the Holeb Unit

### **Recreation**

- Continue monitoring, maintenance and rehabilitation of campsites and the portages on the Moose River Bow Trip with the assistance of NFCT.
- Consider development of overflow parking near Attean Landing, outside the shoreline protected zones, to accommodate overnight parking of vehicles and trailers and reduce competition for parking space at the landing.
- Explore options for providing a group campsite somewhere near Attean Landing, with the objective of provide a facility for Bow Trip groups to utilize the night before they begin their paddle trip.

### **Public Access and Management Roads**

- Work with abutters to clarify public access needs and rights and maintenance responsibilities for the Attean Landing Road.
- As resources allow, maintain the Holeb Landing Road to public use road standards. Consider improvement and expansion of Holeb Landing to provide a more attractive alternative to Attean Landing for Bow Trip paddlers beginning their trip.

### **Wildlife/Rare of Exemplary Ecosystems and Habitats**

- Survey the DWA at the southeast corner of Attean Pond to determine its current condition and evaluate whether any actions to improve the habitat are warranted.
- Manage softwood on the Bradstreet Twp. parcel east of the DWA in a manner compatible with wintering deer.

### **Timber Management**

- The Bureau will manage areas allocated to Timber Management as a multiple use working forest. Timber resources where allocated will provide a diverse forested environment and generate high quality-high value products to support Bureau operations and Maine's timber-based economy. The Bureau will practice multi-aged management with a long-term focus primarily on mature quality timber.
- Because of the Unit's visibility from Attean Pond, Holeb Pond, and the Moose River Bow Trip, much of the timber management is subject to Visual Class II considerations.

### **Administrative Issues**

#### Signage and Visitor Information

- Assess signage and visitor information provided at Attean Landing (and/or at the parking area at the end of public way) and at Holeb Landing for possible improvements.
- Develop an updated and revised Holeb Unit Map and Guide brochure for distribution to the public.

#### Attean Landing Usage and Commercial Lease

- Work with Attean Lodge to develop a lease for their ongoing commercial use of Attean Landing to support the Lodge's operations, with unfettered public use of the site provided for. Access to and use of the shoreline for boat launching and docks and parking for both Lodge customers and the general public need to be clearly defined.



- Address the impermissible seasonal residency by an Attean Lodge employee at the landing, potentially with the development of an alternative site for the trailer up the road, outside the protected shoreline riparian zones.

#### Potential Agricultural Lease

- Determine whether harvesting of hay from the field near Attean Landing will continue; if so, develop an agricultural lease to permit and regulate this use.

### **Cold Stream Forest Unit**

This section provides background information on the Cold Stream Forest property, including the general character of the land base; geologic and ecological resources and natural communities; wildlife resources; historic and cultural resources; recreation and visual resources; and timber resources. This is followed by a summary of the key management issues and opportunities that the Plan will seek to address through the Vision, resource allocations and management recommendations for the unit.

#### *Character of the Land Base and Acquisition History*

The Cold Stream Unit was acquired in March 2016, with the primary goal of protecting wild native brook trout habitat and deer wintering habitat. The acquisition was accomplished with both Forest Legacy Program and Land for Maine’s Future (LMF) funds. In the application for LMF funds, the Bureau committed to special protective measures for riparian areas, given the significance of the fisheries resource (BPL and TPL, 2014). (The measures were to be specified in a Habitat Management Agreement, which is addressed below, under *Wildlife and Fisheries Resources*.)

The 8,150 acres is divided into north and south sections by Capital Road. About half the acreage surrounds a group of ponds at the north end of the unit. A roughly quarter mile-wide corridor extends south for about eight miles on either side of Cold Stream, before widening out at the south end of the Unit. A mile and a half stretch of Cold Stream upstream of Capital Road flows through a 200-300 ft. deep gorge. Additional forested acreage is near Capital Road, adjacent to the Johnson Mountain and West Forks Plt. NE lots, and at the south end of the Unit. A 100-foot wide Central Maine Power-owned powerline ROW crosses the stream corridor half a mile south of Capital Road, along the Johnson Mountain/West Forks town line.

#### *Natural Resources*

*(Note: The information in this section is excerpted from the Natural Resource Inventory report on the Cold Stream Unit, which is based on 2017 field surveys and is available from MNAP.)*

#### **Geology and Soils**

The underlying bedrock consists of various northeast-southwest bands formed over 350 million years ago. The northern portion of the parcel is primarily underlain by sandstone, slate, and rhyolite. The southern portion of the parcel is primarily underlain by mudstone, quartzite, phyllite, and mélange (rock characterized by fragments and blocks of multiple sizes embedded in a matrix of finer-grained material). A relatively small (163 acre) band of calcareous bedrock (limestone) is mapped crossing the stream corridor in the central portion but the vegetation does not appear to reflect this calcareous influence.