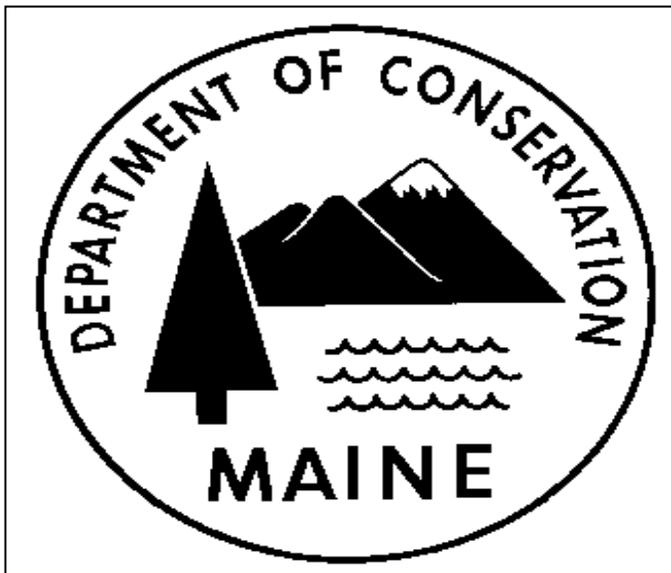


**MANAGEMENT PLAN
FOR
DAYS ACADEMY AND SUGAR ISLAND
(PUBLIC RESERVED LANDS)
AND
KINEO AND FARM ISLAND
(STATE PARK LANDS)**

BUREAU OF PARKS AND LANDS



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Preface

This document is the first ten-year plan for management of several Bureau of Parks and Lands properties on Moosehead Lake: the Public Reserved Lands on Days Academy and Sugar Island, and two State park properties on Kineo and Farm Island. The Public Reserved Lands include 7,275 acres in Days Academy Grant and 4,208 acres on Sugar Island (see Map 1 - Location). The state parks include 800 acres surrounding Mount Kineo in Kineo Township and all of Farm Island, which is 980 acres.

The park properties are included in this management planning process because of their close proximity to the Public Reserved Lands, and because they offer similar recreation and wildlife management opportunities. This is not a precedent in the overall planning process for public lands and parks, and does not mean that the two categories of properties will always be linked in other areas of the state's land management and planning efforts. This decision will be made on a case by case basis. Lily Bay State Park was not included in this planning process because its management approach was already established and in place.

In this particular planning effort, it must be borne in mind that the legislative mandates governing Public Reserved Lands and parks require that the two categories of properties be managed to meet somewhat different objectives: the Public Reserved Lands are to be managed for multiple uses including dispersed, low-intensity recreation, protection of special resources, the production of valuable timber products, and to maintain and enhance wildlife resources; while park lands are to be managed to provide a range of recreation opportunities (e.g. from dispersed pursuits such as hiking to intensively developed and supervised swim beaches and campgrounds), and to protect the natural character and important natural and cultural features of these lands.

This plan, as applied to the Public Reserved Land properties, meets the requirements for multiple use management plans set forth in Title 12 M.R.S.A., Chapter 202-B, section 585, and is consistent with the Planning Policy adopted June 1985 and the Integrated Resource Policy adopted December 1985 by the former Bureau of Public Lands, now the Bureau of Parks and

Lands (the Bureau). These laws and policies direct the Bureau to provide a sustained yield of forest products, to enhance and protect fish and wildlife resources, and to provide opportunities for quality outdoor recreation experiences, among other public benefits. Revenues received from timber harvesting are retained by the Bureau to manage Public Reserved Lands.

This plan, as applied to Kineo and Farm Island, meets the requirements of 12 M.R.S.A., Chapter 203, section 602, which directs that park properties be managed to provide public recreation opportunities and to protect natural resources. The statute also directs the Bureau to manage forested areas within state parks to preserve their natural, recreational, and scenic qualities. The management of timber on a sustained yield basis to generate revenue, however, is not one of the mandates on park lands as it is on the Public Reserved Lands. The management of park lands is primarily supported by monies from the State General Fund, where user fees go, and to a lesser extent by dedicated revenues, such as the money from the sale of Loon License Plates and from the Maine Outdoor Heritage Fund.

The purpose of this plan is twofold. First and foremost, it represents the Bureau's commitment to the wise management of these properties on behalf of the general public. In that regard, this plan is written to be readily understood by everyone who reads it (see Appendix II for definitions of unfamiliar terms). Second, it is a directive to the Bureau staff; it provides clear goals and objectives to pursue in fulfilling their responsibilities as stewards and managers of the Public Reserved Lands and park lands covered by the plan. If significant changes to this plan are necessary, they will be made only after providing opportunity for further public participation.

This is not a plan of operations. It is written to permit professional managers the degree of flexibility needed to respond to unforeseen situations and to still achieve long-term goals. All specific management proposals for the Public Reserved Lands will undergo further interdisciplinary review to ensure balanced consideration of the resources and uses of the property.

This plan is intended to guide the management of all four properties for at least the next 10 years. After that time, the Bureau will review and update the management plan, as appropriate. If substantial changes to the plan are warranted, then the Bureau will revise the plan

with the assistance of a public advisory committee, and hold a public meeting to receive public comment to ensure that stated goals and objectives are appropriate for prevailing conditions. This is especially important as some of the goals for forest and wildlife management will require decades to achieve.

The Bureau acknowledges the helpful participation of the Public Advisory Committee (listed in Appendix IV) and other professional resource managers in the development of this plan. We thank everyone who has participated for their assistance, and appreciate the importance of their contributions. Continued public support is needed to achieve many of the goals and objectives outlined in this plan.

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I. CHARACTER OF THE LAND BASE

A. BRIEF HISTORICAL OVERVIEW

Over the past 11,000 years, the abundant resources of Moosehead's waters, islands, and shores have engendered human activity on a scale as grand as the lake itself. Yet, for all its grand scale, clear evidence of much of this activity remains hidden today, overgrown by forests, buried below ground, or just plain lost, except in photographs, words, and memories.

The Bureau of Parks and Lands properties associated with Moosehead Lake have each seen aspects of this human activity from earliest times. Among these state-owned properties, the lake's most prominent and spectacular land feature, Mt. Kineo, emerges from the prehistoric and historic record as a particular focal point of human inspiration and endeavor.

The native peoples of the northeast coast and woodlands found importance in both Mt. Kineo and Moosehead Lake for a number of reasons. The lake served as access to and connections between several river systems, with fertile waters and grounds for fishing, hunting, and trapping. Abundant stands of birch along lake shores also provided bark for houses, canoes, and baskets. But it was the rhyolite forming Mt. Kineo itself that most distinguished the area. Native peoples extensively gathered, shaped, and traded pieces of this volcanic rock beginning roughly 11,000 years ago until approximately 1700 A.D. when stone tools were replaced by European metal. Bearing testimony to the extensive web of Native American trade and travel, projectile points made of Mt. Kineo rhyolite have been found in sites as far south as Martha's Vineyard, as far east as Nova Scotia and west to Vermont and Ontario.

Henry David Thoreau climbed Mt. Kineo and camped along the peninsula's shores during

his 1857 trip to Maine. In this and his other visits to the region, Thoreau expressed the values of nature appreciation, as well as physical and psychological renewal brought by life in the outdoors, that would also draw others to Mt. Kineo and Moosehead. It was these people, described colloquially as "rusticators" and "sports," from throughout the eastern United States, who made scenic Mt. Kineo and its hotel, the Mt. Kineo House a famous destination point from the post Civil War period to the 1930s.

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At one point during this time, the Mt. Kineo House was the largest inland water hotel in America. The concept of using the peninsula for such purposes actually began quite modestly in 1844 when two Greenville residents built a small tavern with overnight accommodations for a few people who were in the area to fish, hunt, or work in lumbering. A few years later, the first steamboat began plying the waters of Moosehead Lake, thus providing an important means of transporting customers from Greenville to Mt. Kineo. An expanded version of the first tavern was built in 1848 and soon grew to accommodate the larger numbers of people who were able to travel there on the lake's steamers. This first Mt. Kineo House burned completely to the ground in 1868. A second, more luxurious hotel soon replaced it, but it too burned in 1882. Finally in 1884, a new Mt. Kineo House was constructed. This sizable and elegant hotel included 200 rooms, a fifteen foot wide piazza around the building, a bowling alley, music room, library, and golf course, along with bathrooms, electric bells, and other modern conveniences. Guests could hire guides to take them on fishing and hunting trips. Canoeing, horseback riding, and tennis were available as well.

The Mt. Kineo House opened for its 67th season in 1911 with an even larger and more modern facility. The hotel itself had been remodelled with the addition of a new wing with well-equipped rooms, including private baths. A total of 500 guests could now be accommodated. Two large elevators had been built, along with modernized water supply and power generating systems. Most famous was the new dining room, which could seat 400 guests. All around it

were great windows of plate glass. As a brochure advertising Mt. Kineo House at the time described: “Through them (the dining room windows), one may look out on the green lawn, the shining lake, the forest covered mountain, and the distant blue peaks, for it is so located as to command views of the lake in every direction as well as Mt. Kineo itself.”

One historian wrote that two exciting events happened each day at Mt. Kineo House, the arrival of the steamer from Greenville, and the arrival of the train at Kineo Station across the strait in Rockwood. Other parts of the lake also shared in such exciting events. During the heyday of their use, more than twenty steamers worked the lake, transporting passengers to accommodations and outdoor pursuits, ferrying supplies to lumber camps, and towing log booms.

No other hotels or camps could match the elegance of the Mt. Kineo House, but numerous other island and mainland locales also provided accommodations for people coming to Moosehead to fish, hunt, and recreate. More particularly, land currently owned by the state Bureau of Parks and Lands once had several such facilities. Farm Island, for example, had Camp Ogontz. On Sugar Island’s Birch Point, a set of camps known as Camp Greenleaf was built in the 1890s. Early advertisements for Camp Greenleaf claimed that travel from Boston to Sugar Island took only 14 hours, with the journey going by rail from Boston to Greenville and by steamer from Greenville to the camps. In 1908, Camp Greenleaf included several large detached lodges near the main camp, fine table fare, daily mail, telephone, and a private launch. An advertisement also proclaimed: “Positively no flies, gnats, or mosquitos here.” Sugar Island had another set of camps and hotel known as Capen’s, which included a large main structure, barn, several individual camps, and a tennis court.

While lands studied in this management plan saw a good deal of the camp and resort industry that has distinguished Moosehead Lake over the past 150 years, they were also logged extensively. Day’s Academy, for example, once supplied white birch for spools made by the American Thread Company of Milo. In the early 1920’s, the company even built a two-mile, narrow gauge railroad, remnants of which can still be found today, to haul logs out of the woods to the lake. The logs were then towed to Greenville and shipped via rail to Milo. Day’s

Academy lands, owned by Hollingsworth and Whitney, were also logged to supply mills with spruce and fir pulpwood. Hardwoods from Sugar Island supplied stock for a veneer mill in Greenville before the island was purchased by Hollingsworth and Whitney and logged for spruce and fir pulpwood.

B. DESCRIPTION OF THE PROPERTIES

Two properties, designated as Public Reserved Lands, were conveyed to the State of Maine as a part of land trades between the State and Scott Paper Company, and include 7,275 acres on the east shore of Moosehead Lake in Days Academy Grant (conveyed 1990) and 4,208 acres on Sugar Island (conveyed 1985) (see Appendix I, Map 1 - Location, Map 2 - Days Academy Features, and Map 3 - Sugar Island Features). These properties will be managed according to legislative and policy guidance pertaining to Public Reserved Land properties. Also as part of the Days Academy transaction, Scott Paper Company in 1990 granted a conservation easement to the State of Maine on nine miles of Moosehead Lake shoreline in Days Academy Grant, to a depth of 500 feet, extending south of the State property (see Map 2 - Days Academy Features). The conservation easement extinguished development rights but allows the Bureau to locate and maintain up to nine new water access campsites and to continue to make manage existing campsites for public use.

The other two properties, Farm Island (980 acres) and Kineo (800 acres), were acquired by the former Bureau of Parks and Recreation (see Map 4 -Kineo/Farm Island Features). Farm Island was a gift from Julia E. Crafts Sheridan and R. Philip Sheridan (1971), and Kineo was acquired from Louis O. Hilton with monies from the Land for Maine's Future program (1990). Farm Island is designated in statute (12 M.R.S.A., Chapter 713, section 7651) as a wildlife sanctuary (no hunting or trapping allowed). Management decisions regarding these properties will be made in light of legislative guidance and adopted rules pertaining to State parks, and, as appropriate, in accordance with policy guidance in the Planning Policy and Integrated Resource Policy, both adopted in 1985 by the former Bureau of Public Lands.

The Days Academy property encompasses two privately-owned in-holdings along the shore of Moosehead Lake (see Map 2 - Days Academy Features, in-holding #1, Deer Head Farm, 80 acres; and in-holding #2, Folsom Farm, owned by the Folsom family, 60 acres), and also includes three small areas (indicated by small squares) leased by the Bureau for seasonal camp use. Sugar Island has thirteen privately-owned in-holdings along the shore ranging in size from one-quarter acre to eight acres (see Map 3 - Sugar Island Features).

The Kineo property includes the former Mount Kineo fire control watchman's camp; a one-third acre lot encompassing the camp is licensed for private use. The camp and small dock are privately owned. The licensed area and cabin are located on the west shore of Kineo at the trailhead for the Bridle Trail leading to the former fire tower (now a viewing platform). Farm Island has no in-holdings or leases.

Moosehead Lake, covering 117 square miles, is the largest water body in Maine; more than two and a half times the size of Sebago Lake, the state's second largest lake. It is nearly 30 miles in length, with over 245 miles of diverse shoreline including several large, undeveloped islands and numerous sand, gravel, and cobble beaches scattered along the shore. Maximum depth is 245 feet and average depth is 55 feet. The lake is largely surrounded by mountainous terrain providing scenic views from most of the lake and shore.

In 1990, there were about 2000 private or commercial camps on the shore of the lake, along with approximately 400 private campsites. Only two state transportation roads provide access to the lake: Route 6/15 from Greenville to Rockwood on the west shore of the lower basin and a road from Greenville to Lily Bay on the east shore of the lower basin. All other road access to the lake is over private roads originally constructed for timber management.

Moosehead Lake supports outstanding fishing resources and is considered one of the most economically important lakes in the state. The principal species are landlocked salmon, brook trout, and lake trout, with salmon being the only species stocked. The area is also rich in game and non-game birds (cormorants, eider ducks, gulls, bitterns, ospreys, loons, and great blue herons) and mammals (snowshoe hare, red squirrel, white-tailed deer, black bear, and moose).

Boating for pleasure and to fish is a popular recreation activity; and boats also serve as the primary means of transportation to reach remote sections of the lake shore that are otherwise served only by timber management roads. Fishing for brook trout, togue, and landlocked salmon are popular recreational activities on Moosehead Lake. Ice fishing is estimated to comprise one-third of the total angler days on the lake. The principal public boat ramps are located in Greenville, Rockwood, and Lily Bay, and additional access points can be found at the numerous marinas, sporting camps, and campgrounds around the lake. The lake also hosts at least three float plane bases that serve sightseers and remote woods camps.

In winter, snowmobiling is a major activity pursued in conjunction with ice fishing or for pleasure excursions on the lake or into remote areas of the north woods. *Route #86 of the Interconnecting Trail System (ITS) linking Millinocket and Jackman skirts the southern lake from Kokadjo to Greenville to Rockwood. The locally groomed Moosehead Loop provides a route around the north end of the lake connecting Rockwood, Seboomook, and Kokadjo. Route #66, also locally maintained, provides an alternative route across the lake from Kineo to Rockwood creating shorter lake loops and a shortcut from Millinocket and Kokadjo to Jackman. Of these major snow trails, only Route #66 crosses BP&L property: along the southern boundary of Days Academy and across the Rockwood boat access site.*

Days Academy, Sugar Island (the state's largest inland island), Kineo, and Farm Island provide high quality recreation opportunities. All of these properties are used by boaters and campers from spring through fall. Hunters use Days Academy and Sugar Island during the hunting season; however, hunting and trapping are not permitted on Farm Island. Located within the area of the conservation easement, the large, open, former log yard at Cowan Cove has historically been used as a boat launching area and for camping with peak use occurring over Memorial Day, Fourth of July, and Labor Day weekends. Mount Kineo has frequently used hiking trails leading to its summit. Little Kineo and Shaw Mountains on Days Academy also have trails leading to their summits, which are less frequently used. There are primitive campsites on all four properties. *There are primitive snowmobile trails on both Kineo and Days*

Academy including the Bridle trail to Kineo summit and the roads leading to the Deer Head Farm/Sim's Hideaway and Kelly Wharf on Days Academy.

Lily Bay State Park (a gift from Scott Paper Company) provides additional, more developed recreation opportunities on Moosehead Lake (see Map 1- Location). The park has two campgrounds (93 campsites), a picnic area, and swim beach. The park also has two hard-surfaced boat ramps providing access for boaters who want to camp on nearby Sugar Island or at other sites around the lake. In 1994, the Bureau developed a boat access site with a hard-surfaced ramp in Rockwood, which is convenient for launching a boat to reach Cowan Cove and campsites along the shore of Days Academy, Kineo, and Farm Island. The Rockwood boat ramp is also the primary means of access to the Mount Kineo hiking trail system, while providing winter parking for snowmobiling and ice fishing. At the south end of the lake in Greenville Junction, the Bureau assisted the Town of Greenville with the development of a ramp suitable for launching large boats. The Bureau also provides over 180 navigation hazard and safety zone markers on the lake to aid boaters.

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Days Academy and Sugar Island, former Scott Paper Company properties, are primarily timbered with hardwoods, and to a lesser extent with mixed wood and softwood stands. Both have traditionally produced substantial quantities of forest products. Sugar Island was extensively harvested (most recently) from 1964 to 1973, with the wood yarded across the ice to Lily Bay Landing, which is now part of Lily Bay State Park, and to other nearby locations. It has not been operated since. Days Academy was heavily harvested prior to State ownership; and it will be many years before the property once again generates a substantial flow of forest products.

Kineo is primarily timbered with hardwood with an area of mixed wood and softwood in the north central end of the peninsula, and spruce on the ledges. Farm Island is primarily timbered with hardwood, and a smaller amount of mixed wood and softwood. Farm Island was extensively harvested (most recently) during the 1960s, with over half of the island harvested for softwood pulp, and the hardwood and mixed wood stands high-graded for hardwood logs.

C. CHARACTER OF THE LAND BASE

The character of the land base is derived from the bedrock and the effects of glaciation which deposited sands and gravels, cobbles, boulders, and other material over the bedrock. Site productivity for forest and other vegetative cover is largely a function of the quality of the soils formed over the residual glacial material.

Bedrock and Glaciation

On the Days Academy property west of Little Kineo Mountain, the bedrock is part of the Tomhegan Formation. This unit consists of several different rock types, the most common of which in this area is dark gray slate and rusty-weathering siltstone that contain abundant fossils (Boucot and Heath, 1969). Both are thinly bedded units, but with well-developed, near-vertical cleavage planes, which tend to dominate the character of any outcrop. Thickly bedded, dark gray sandstone is less common in this area. The Kineo Mountain Volcanic Member, a rhyolite unit of the Tomhegan Formation that is highly resistant to erosion, underlies areas of high local relief. The main part of this member consists of an extremely fine-grained, almost flinty, blue gray rock characterized by small, glassy crystals of quartz. Other less common rock types in the member are conglomerate with rounded cobbles of several centimeters or more in size, and a flow breccia with angular fragments (Boucot and Heath, 1969).

East of Little Kineo the bedrock is of the fossiliferous Tarratine Formation. The main part of this formation consists of very thickly bedded dark gray sandstone that is medium grained (Boucot and Heath, 1969). Other less common rock types in the formation are gray slate and thinly bedded siltstone. This formation achieves one of its greatest thicknesses, about 2400 meters, at Big Duck Cove.

The bedrock in the area of Harris Cove and Cowan Cove consists of a number of related volcanic and sedimentary rock types that are much older than the formations described above. These rocks include a sandstone derived from volcanic rocks, a dark green basalt unit, and rhyolitic volcanic rocks (Simmons, 1987).

Sugar Island is underlain in large part by fine-grained sedimentary rocks of the Seboomook Group. The primary lithology is fine-grained slate and siltstone arranged in beds of a few cm to 20 cm (1 to 8 inches) in thickness. The northern end of the island is underlain with limey sedimentary rocks. Central areas of the island also include a minor unit of quartzite. Gabbro of the Moxie/Big Squaw intrusions underlies the southern end of the island. Metamorphism caused by the heat of this intrusion is responsible for the more resistant rock underlying the hills on the southern part of the island (Boucot and Heath, 1969).

The bedrock character of Mount Kineo matches that of Days Academy from Little Kineo westward: a siltstone formation (Tomhegan) with an erosion-resistant, rhyolitic volcanic member that gives Mount Kineo the distinctive relief which has become a signature for the Moosehead Lake area (Boucot and Heath, 1969).

Farm Island bedrock is also of the Tomhegan Formation, but is thought to be at the boundary of two different faces: a northern gray-weathering sandstone, cleavage planes dipping northwest, without faulting; and a southern rusty-weathering sandstone, cleavage planes dipping southeast, with significant faulting. The faces are further distinguished by different fossil communities (Boucot and Heath, 1969).

Glacial ice advanced across the region from northwest to southeast scouring and plucking the bedrock surface leaving hills such as Little Kineo Mountain and Mount Kineo gentle on their northwest sides and precipitous on their southeast. The ice retreated 12,000--13,000 years ago, leaving a blanket of glacial materials over the bedrock. Weathering eventually resulted in the slope of rock fragments (talus) at the base of Kineo cliff. The fragments were highly prized by prehistoric people for weapons and tools, and Kineo rhyolite is found throughout New England as a result of trading among different groups (Huber, 1981).

Most of the area of Days Academy, Sugar Island, Farm Island, and the northwestern slope of Mount Kineo is underlain with basal till, a heterogeneous mixture of sand, silt, clay, and stones (Genes and others, 1986). Till of this nature is formed through the grinding action of the glacier on the rock beneath it; it is fine-grained and very compact with low permeability and poor drainage. Areas underlain by basal till are characterized by smooth topography like that of Sugar Island. Valley areas may be locally underlain with ablation till, a looser, sandy and stoney material deposited as the glacier melted. These materials typically have better permeability and drainage than basal tills. A few scattered, small areas along the shore of Moosehead Lake are underlain with sand and gravel deposits formed by glacial streams carrying meltwater along the edge or beneath the glacier.

Soils in the area result from the interaction of the bedrock with glacial processes. The basal till, upon which soils developed, formed through glacial grinding of bedrock over a large area to the northwest of Days Academy. Most of the rocks underlying Days Academy, Kineo, and Farm Island are fine-grained sedimentary rocks with high clay contents. They are not particularly enriched in iron, magnesium, or calcium, and tend to produce clay-rich soils, which also are not enriched in these elements. Where basaltic volcanic rocks are present near Harris and Cowan Coves soils may be locally enriched in iron and magnesium.

Sugar Island is underlain by a variety of rock types. On the northern end of the island soils should be strongly influenced by limey bedrock and be enriched in calcium. The southern end, underlain by gabbroic bedrock, should have soils enriched in iron, magnesium, and to a lesser degree calcium. In other areas of the island the soils should generally be clay-rich, but without significant enrichment in these elements.

Natural Communities

In their 1993 report, Days Academy Grant and Sugar Island Landscape Analysis, Spencer, Famous and Lewis describe the character of the plant communities on these two properties.

Days Academy -- Days Academy has a greater variety of natural communities than the other properties due to the variations in its topography, bedrock, soils, and drainage, and as a

result of the more recent timber harvests. Little Kineo with its exposed bedrock, cliffs, and slopes provides a variety of sites for unique plants. Biologically, the top of the mountain is comprised of Acidic Summit and Acidic Cliff communities. Due to shallow soils, the summit is dry with sparsely vegetated balds interspersed with wooded patches comprised of red and white spruce, and paper birch. Typical herbaceous species include bracken fern (*Ptilidium aquilinum*), hay-scented fern (*Dennstaedia punctilobula*), and wild sarsaparilla (*Aralia nudicalis*). Lichens and mosses were found on the balds, generally along with a grass. Cliff vegetation occurs as scattered patches on narrow ledges or close to the base of the cliffs. Much of the cliff face is nearly vertical, dry, exposed, and lacks vegetation. Typical species include rusty woodsia (*Woodsia ilvensis*), paper birch, northern white cedar, dusty goldenrod (*Solidago puberula*), meadowsweet (*Spiraea latifolia*), and harebell (*Campanula rotundifolia*). There is an abundant and healthy population of fragrant cliff fern (*Dryopteris fragrans*), a state-listed species of Special Concern, along the south end at the base of the cliffs. Otherwise, no rare plants were found within the summit or cliff communities.

Recent timber harvesting on Days Academy has produced scattered, young, regenerating forests. Half of the property is covered by Northern hardwood type, which includes primarily American beech, red maple, sugar maple, and yellow birch in the older areas along with inclusions of spruce and fir, with aspen and paper birch predominating in more recently cut areas. Botanically, the richest and most diverse area includes the hardwood forests around Little Kineo Mountain and the lower part of the cliffs. Although not state-listed, rattlesnake fern (*Botrychium virginianum*) and sweet cicely (*Osmorhiza claytonii*), both of which are uncommon, were found there and nowhere else on Days Academy. Some areas that have not been harvested since before the turn of the century have groups of trees with an average age of more than 100 years. On the slopes of Little Kineo and Shaw Mountains, where harvesting would have been more difficult, older hardwood trees have dbh's between 18 and 24 inches and are up to 100 feet tall. On the west slope immediately below the top of Shaw Mountain is a stand of older hemlock with dbhs between 12 and 18 inches, canopy closure of 75-100 percent, and larger individuals

spaced 50-75 feet apart. If left uncut, these stands will soon be considered "old growth", providing additional diversity to the natural communities on the property.

Wetlands and flowages are found at the base (east side) of Little Kineo Mountain, and include Red Maple Swamp, Spruce-Fir Swamp, Vernal Pool, and Shrub Swamp communities. Dominant species include red maple, black spruce, and alder. Other typical species include sensitive fern, mountain holly, willows, purple-stemmed aster, and long-haired sedge. Wetlands on the north side of Shaw Mountain were created when construction of old logging roads constricted the stream channel at two points and impounded water. The two wetlands are similar in character, and include Shrub Swamp, Marsh Headwater Stream, and Intermittent Stream Community types. Dominant species include alder, bulrush, sphagnum moss, cattails, and an assortment of sedges. Elsewhere, beaver have created wetlands by damming culverts of the old road system.

There are no significant lakes or ponds on the Days Academy property, which is drained by small brooks. There is also not much area in marshland, therefore, the existing beaver flowages are important elements of habitat diversity. One beaver flowage visited included plant communities typical for this habitat in north central Maine, that is, Beaver Flowage, Shrub Swamp, and Marsh Headwater communities. Typical plant species include alders, sedges, bulrush, reed-bent grass, jewelweed, rushes, manna grass, and sensitive fern.

The highest elevation on Days Academy is Little Kineo Mountain at 1,927 feet, followed by Shaw Mountain at 1,653 feet. The open balds on the top of Little Kineo Mountain provide good views of the Days Academy property and Moosehead Lake.

Sugar Island -- Most of Sugar Island has been harvested at some time during the last century. The most recent harvesting occurred more than 20 years ago in the southern portion and along the shoreline of Galusha Cove. Partial cutting has occurred elsewhere throughout most of the island. The oldest stands are located at the northern tip, in the north-central portion, in the southeast portion at higher elevations, and scattered along the shoreline. In addition to timber production, the island's maple trees may have been used for maple syrup production.

Typical tree species found on the island include sugar maple, red maple, American beech, yellow birch, red spruce, hemlock, and white pine. Species in the understory include striped maple and balsam fir. Typical herbaceous species include hay-scented fern, spinulose wood fern (*Dryopteris spinulosa*), wood sorrel (*Oxalis montana*), stiff club-moss (*Lycopodium annotinum*), and starflower (*Trientalis borealis*). Various types of mosses are also found in the moister understory areas. These various herbaceous and moss species are indicators of a hardwood forest with acidic soil conditions.

The terrain of Sugar Island is gently rolling with the highest elevation approximately 1480 feet. There are no significant ponds on the island, which is drained by small brooks.

Kineo -- The most dominant feature of the Kineo peninsula is Mount Kineo (elevation 1,789 feet) located on the 800-acre state parcel. On its east side the cliffs rise 700 feet above the surface of Moosehead Lake. Henry David Thoreau, in The Maine Woods, said ". . . Mount Kineo is the principal feature of the (Moosehead) Lake and more exclusively belongs to it." Kineo is noted for a rare community type, the Northern New England Calcareous Cliff Community. The list of rare plants on Mount Kineo includes rock cress-Whitlow grass, hair-like sedge, birdseye primrose, and fragrant cliff wood-fern. Forested slopes stretch steeply down from the summit to the west, more gradually to the north. The central core of the property is softwood, surrounded by hardwoods and some mixed wood.

Farm Island -- Elevations on Farm Island range to about 1160 feet and are 130 feet above the mean lake level. The island is rimmed with mixed hardwood on the east, north, and west shores, while the south shore and interior are primarily mixed hardwoods and conifers. Species include sugar and red maple, beech, birch, poplar, red spruce, balsam fir, and white pine. The island was last cut in the mid-1960s. Surface water is limited to a small pond on the southwest shore, a spring on the east shore, and a number of small seeps. Wetlands are small and few. The island shoreline is generally rocky with a few, narrow, shallow coves and gravel beaches.

Generally uniform site conditions, a lack of exposed bedrock and wetlands, and poor soil conditions mean the island has a low potential to contain rare or sensitive plants. It is not a high

priority site for peregrine use except by virtue of its closeness to Mt. Kineo, and although the island is a designated game preserve with a designated deer yard, there was little evidence of heavy deer use.

II. RESOURCES AND MANAGEMENT ISSUES

II. RESOURCES AND MANAGEMENT ISSUES

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Preservation Commission.

"A natural community is defined here as an assemblage of interacting plants and animals and their common environment, recurring across the landscape, in which the effects of recent human intervention are minimal" (see Appendix III, Reference 7, page 1.). These areas offer opportunities for scientific study of natural community succession, post-fire population dynamics, and plant and animal community composition, among other possibilities. They also provide recreational opportunities for nature study. Examples of natural communities that are rare or lacking in a region may be appropriate for protection, and eventually included as a part of a statewide ecological reserve system.

Maine's Endangered Species Act recognizes four levels of relative threat of extinction for rare animals and plants, which defines the urgency of management efforts to protect and/or monitor them: 1) Endangered Species; 2) Threatened Species; 3) Special Concern Species; and 4) Extirpated Species (for definitions of these terms see Appendix II, Glossary).

Table 1 (page 23) lists important natural communities and associated plants identified during the natural resource inventories conducted on the properties. In addition to special natural resources, these properties contain special cultural resources that may require protection or interpretation. Important historic and archaeological sites are listed in Table 2 (page 24).

Days Academy -- Days Academy has a variety of natural communities due to the variations in its topography, bedrock, soils, and drainage, and as a result of recent timber harvests. Little Kineo with its exposed bedrock, cliffs, and slopes provides a variety of sites for unique plants (Site 1-- Acid Cliff and Acidic Summit communities, see Table 1., page 23 and Appendix III, References). There is an abundant and healthy population of fragrant cliff wood-fern (*Dryopteris fragrans*), a state-listed species of Special Concern, along the south end at the base of the cliffs. In late June 1993, a peregrine falcon was heard on the upper cliffs near the south end of Little Kineo Mountain. They may use the cliffs as hunting perches. An adult pair have nested for nine years on the cliffs of nearby Mount Kineo, and fledged 10 young. Peregrine falcons are State-listed endangered species.

The richest and most diverse area on Days Academy is the hardwood forests around Little Kineo Mountain and the lower part of the cliffs (Site 2 -- Hardwood Forest and Talus Slope Communities). Although not state-listed, rattlesnake fern (*Botrychium virginianum*), and sweet cicely (*Osmorhiza claytonii*) were found in these hardwood forests and were not encountered anywhere else on Days Academy or Sugar Island.

On the west slope of Shaw Mountain is a hardwood forest type comprised of yellow birch, American beech, and sugar maple at lower elevations and a mixture of hemlock and red spruce at higher elevations (Site 3 -- Hardwood Forest and Talus Slope). Immediately below the top of Shaw Mountain is a stand of older hemlock that if left uncut will soon be considered "old growth".

On the northeast side of Shaw Mountain, at the head of Farm Brook is a mature Northern Hardwood Forest Community (Site 4), with scattered trees up to 100 feet tall, numerous ferns, springs, and early summer wild flowers. The highest diversity of plant species in this community was found along the shoulders of the main road and the old logging skid trails running into it. The diversity has resulted from natural plant succession following disturbance from past logging activities. An exceptional population of club-spur orchid (*Habenaria clavelata*), numbering in the hundreds, grows along the damp, eastern shoulder of the main road for about half its length; this species is not state-listed. The road provides access to a series of

beaver flowages with views of Shaw Mountain, vernal pools, and the area has a general mountain atmosphere.

There are two Paleoindian archaeological sites on Cowan Cove Point that may be highly significant and deserving of special consideration. Exploration of these sites to date, has yielded primarily stone flakes of rhyolite and chert, but in some locations a small number of stone tools have been recovered.

Sugar Island -- A small watershed draining into a large un-named cove on the west side of Sugar Island contains three areas of interest (Site 5). The first is a small, older-growth stand of hemlock where the stream discharges into the lake. The several acre stand may have been selectively cut. Fossil shells were found in cobbles along the shoreline northwest of the mouth of the stream. Further up the stream, 1500 to 2000 feet from the lake, is a balsam fir stand containing trees in the 15-20 inch dbh range. This stand is located along an old woods road that parallels the southeast side of the stream. It successfully survived the last spruce budworm outbreak. The woods road passes within 50 feet of the site of a former structure with a massive dirt foundation (six to eight feet wide at the base) and heavy timber supports (the foundation is located on the east side of the balsam fir stand). This may have been an old sugar shack. The third site, at the head of the stream, is a series of beaver flowages with a nearby stand of northern white cedar with dbhs ranging from 10 to 20 inches. The site has potential for *Calypso bulbosa*, a state-listed orchid (none were observed). This small watershed shows less disturbance from past harvesting activities than other areas of the island; however, the hemlock and balsam fir stands, and the beaver flowages are not significant from a regional perspective and therefore are not designated Special Protection.

Sugar Island has one archaeological site on the south end of the island that may be worthy of special consideration. The site has only had a Phase I (see Glossary for complete definition) archaeological reconnaissance (surficial examination of the site), and additional work is needed to verify its importance; however, it should be protected until additional information can be gathered.

Kineo -- There are five known prehistoric archaeological sites on the Kineo property: two sites in the vicinity of Hardscrabble Point; two sites located along the Kineo cliff face; and one site on the south side of the Mount Kineo talus slope. Most of these sites were combination workshop and campsites. A substantial amount of debris from the manufacture of stone tools has been found along the Kineo cliff face; however, the increase in lake level (due to construction of the East and West Outlet dams) has flooded the majority of the site. Aboriginal artifacts were identified within the fluctuation zone of Moosehead Lake in the vicinity of Hardscrabble Point. It is likely that a large portion of this site has already been destroyed by erosion. A Phase I archaeological survey along the south side of the Mount Kineo talus slope revealed few positive artifacts, but the site may still have importance yet to be revealed by future investigations.

Farm Island -- Overall, plant community types on the island are limited and no ecologically sensitive or rare types were found. Forest communities include Northern Hardwood Forest, Spruce/Fir Flats, Mixed Hardwood-Conifer Forest and scattered patches of Early Successional Forest. The effects of logging some 30 years ago include several patches of poplar (early successional) on the west side, probably related to cleared wood storage areas; remnant spruce/fir stands that were too small to market 30 years ago; occasional large hemlocks left untouched by the 1960's harvest and rotting cut stumps throughout the island.

Wetland community types include Lacustrine Emergent and Lacustrine Shallow Bottom present at the pond on the southwest shore, and two small patches of Shrub Swamp, one associated with the pond and the other associated with the spring on the east shore. The pond is separated from the lake by a narrow rock and gravel bar that permits free movement of water between the two bodies. The steep drop-off from the bar into the lake inhibits the development of marsh vegetation. Animal species observed using the pond include leeches, dragonflies, dace, green frog, hooded merganser, muskrat, moose, and deer. Birds heard include junco, white-throated and swamp sparrows, chestnut-sided and yellow-rumped warblers, and solitary vireo. Overall, the site is good herp breeding habitat. The spring, accessed by an old road on the east central side of the island, forms the only stream channel found on the island. The small Shrub Swamp associated with it shows no species richness. There is a highly significant archaeological

site located on the south end of Farm Island that the Maine Historic Preservation Commission recommends be considered for nomination to the National Register of Historic Places. The site has had a Phase II archaeological reconnaissance (see Glossary for complete definition), which included sampling from both subsurface pits and surface collection in the shoreline fluctuation zone and backshore area. Artifacts from the site are particularly important because they are similar to artifacts found in the Gaspé Peninsula (Quebec, Canada) suggesting the possibility of a temporal, cultural relationship among native peoples from the two areas. The information from this site suggests that more human activity took place in Maine earlier (during the Early and Middle Archaic Traditions ca. 9,500 - 6,000 B.P.) than previously recognized. The site is threatened by natural erosion. Bureau management activities on Farm Island need to be conducted with a recognition of the importance of this site.

Table 1.

Important Natural Communities/Sites on the Moosehead Lake Properties

(See Appendix I, Maps 5, 6, and 7 -- for Site Locations)

<u>Acreage</u>	<u>Site</u>	<u>Site Name</u>	<u>Community Type</u>
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Summit
Peregrine F

Table 2.

Special Cultural Resources on the Moosehead Lake Properties

Forest and

Herbaceous

Potential)

60

Hemlock
with 15-20

variable

Special Cultural Resources on the Moosehead Lake Properties		
<u>Prehistoric Archaeological Sites</u>		
<u>Determined to be Highly Significant by the Maine Historic Preservation Commission</u>		
and is considered to be Moosehead	Cowan Cove	(Two sites, one of which is Late Paleoindian, 9,000 - 10,000 years old, one of the most important sites on Lake)
importance	South end of Sugar Island	(Further work is needed to determine of this site.)
listing	South end of Farm Island	(Site is Late Paleoindian and eligible for in the National Register of Historic Places.)

Peregrine Falcon Nest Site

2. Special Resource Management Issues

The six natural communities/sites identified as containing sensitive natural resources could be degraded by human disturbances such as timber harvesting, road-building, etc., unless management activities on the properties are conducted with an awareness of their location and sensitivity to disturbance.

Populations of fragrant cliff wood-fern along the base of the cliffs of Little Kineo are protected for the most part due to their inaccessible locations. *The location of rare plants on Mount Kineo relative to existing trails and campsites must be ascertained.*

Peregrine falcon nesting, hacking and perching sites have been documented on the cliffs of Mount Kineo. Because peregrine activity can be disrupted by hikers traveling too close to the cliffs, former trails and scenic vistas on Kineo were relocated away from important sites. The closed trails in these areas must still be brushed over. The cliffs of nearby Little Kineo have numerous overhangs and provide potential nesting habitat for the peregrine falcon. During the natural resources inventory, the consultant detected peregrine vocalization near these cliffs, but no evidence of nesting activity was observed. Bureau personnel observed a peregrine flying near the cliffs in August 1995, and monitored the cliffs for their presence during the spring of 1996 (none were observed). Peregrine activity on Little Kineo could be adversely affected by hikers wandering too close to nesting, hacking, and perching sites (although such uses of the summit have not yet been confirmed).

The special cultural resources listed in Table 2 will need to be protected from management actions, such as timber harvesting, road construction, or campsite development, that could diminish their values. Placing the exact location of these sites on management plan maps could result in identification of their locations on the ground, and possibly lead to compromising the integrity of the artifact assemblage. Bureau staff responsible for management of the property will be made aware of the exact location of these archaeological sites, so that management actions in these locales can be planned to avoid them.

B. WILDLIFE AND FISHERIES

1. Description of Wildlife and Fisheries Resources

a. Wildlife General Habitat Conditions:

Days Academy -- The variety of forest types and the varied pattern of timber harvesting across most of Days Academy has resulted in a diverse array of habitats. Compared to adjacent lands the unit has more habitat diversity.

The property is dominated by hardwood type (50%) with lesser amounts of mixed wood (40%) and very little softwood (10%). Large softwood stands and extensive wetlands are not represented on the property. Much of the hardwood and mixed wood types are made up of intolerant species such as aspen and white birch, which occurs in a mixture with red maple, sugar maple, beech, and yellow birch. The beech has the potential to be managed to produce beechnut mast, which is an important wildlife food.

There are some regenerating softwood stands that provide ideal snowshoe hare habitat, and hare are the primary prey of most native carnivores. Beaver are numerous, due to abundant food sources, such as aspen. Their activities have flooded roads, especially in the northern half of the property, creating small wetlands. The preponderance of mixed wood types supports a variety of songbirds. Representative species include Canada warbler, yellow-rumped warbler, northern parula, and blackburnian warbler.

The Days Academy property has substantial area in the aspen/birch association which is a short-lived, early successional forest type preferred by several species of wildlife including beaver, grouse, northern redbelly snake, some warblers, and yellow-bellied sapsuckers. Other species such as moose, woodcock, and red fox also benefit from this type.

The old fields at the Deer Head Farm, are a rare habitat type in this region of the state, and are reverting to forest due to lack of management. They provide an important element in the habitat diversity of the Days Academy property. The reverting fields may be an important hunting area for peregrines, since small birds are their preferred prey. The fields contain old apple trees and scattered alder patches, both of which could be managed to benefit wildlife.

Several vernal pools, critical for amphibian reproduction, were identified on Days Academy during the natural resources inventory. The streamlining of permitting procedures for freshwater wetlands by the 117th Legislature in 1995 added "significant vernal pools" to the list of regulated "significant wildlife habitats" **[need input from Joe]**.

Sugar Island -- Sugar Island has resident deer and black bear, and transient moose. These species, and others, migrate between the island and the mainland.

Kineo -- Peregrine falcons are both state and federally-listed as endangered species. A nesting pair on Mount Kineo is one of only seven pairs in Maine. Peregrines were first seen on the cliffs of Mount Kineo in 1986, and the first nest was observed in 1987. Over the last nine years ten fledglings have been produced, including one in each of the previous three years.

There are two LURC-zoned deer yards on the park properties. The 173-acre deer yard on Kineo was receiving a moderate level of use when inspected in February of 1996. It is composed of mature to over-mature softwood, primarily red spruce, with some trees already starting to fall over. Fallen trees are a serious impediment to deer mobility and reduce the value of the yard to deer. In the long-term, it is unlikely that this yard will remain a functional winter shelter on a continuing basis without management intervention.

Farm Island -- A 351-acre deer yard on Farm Island showed no evidence of use during a cursory visit in February 1996. In 1971, DIF&W biologists reported that there was a resident deer population on the island, and that bear and moose were transient. There are only about 100 acres each of softwood and mixed wood on the island. There may have been a greater softwood component in the past that provided winter shelter for deer. In its current condition, the deer yard may not provide suitable shelter.

To retain the long-term winter shelter value of the deer yards on Kineo and Farm Island would require periodic timber harvesting to maintain several age classes of softwoods. However, timber management would be difficult due to access problems, and the earlier discussed legislative limitation on timber management on park lands. Timber management to improve wildlife habitat is a permissible activity on these park properties; however, because it is

unlikely that the value of the timber could cover the harvesting costs the management would need to be subsidized from other revenue sources.

Hunting: The primary access road into Days Academy Grant is passable by two-wheel drive vehicles. Some hunters use the Cowan Cove campsite to park their campers while hunting on the nearby State-owned lands. Hunting occurs on Sugar Island through boat access, and possibly from camps on the island. Farm Island has been designated by the legislature as a "Game Preserve", where hunting and trapping are not allowed.

b. **Fisheries:**

The primary fishery related to the properties is in Moosehead Lake; there are no lakes or ponds on the properties and stream fishing is seasonal. The lake supports a major recreational fishery for landlocked salmon, brook trout, and lake trout or togue. The primary forage base of these species is rainbow smelt, supplemented to a lesser extent by insects and other fish species. In the 1960s, a decline in the lake trout population led to a modified lake level management plan designed to ensure that spawning areas are not disturbed by lake drawdowns in the late fall and winter. One of the sites identified as regularly used by spawning lake trout is located off Sugar Island. In 1975, stocking of lake trout in Moosehead ended and the present fishery is entirely dependent on natural reproduction. The brook trout population is also maintained entirely by natural reproduction. White perch, illegally introduced to the lake in 1984, are now well-established and increasing in abundance. They threaten the future of this traditionally important brook trout component of Moosehead's fishery. The landlocked salmon population is supported by both wild and hatchery fish. Wild salmon production is limited by the amount of nursery area available in the tributaries, therefore salmon are also stocked each year to maintain a desirable fishery. Stocking rates depend on the availability of adequate forage to sustain good growth rates and condition factors.

2. **Wildlife and Fisheries Management Issues**

Use of the cliffs on Little Kineo Mountain (Days Academy property) by peregrine falcons has not been assessed. There does not appear to be a substantial threat to nesting peregrines on Mount Kineo from hikers due to the inaccessible location of the nesting sites. The

only potential disturbance would be from rock climbers. Peregrines have historically used the northeastern portion of the cliffs for nesting; the rock face of the cliffs in this area is "crumbly" and therefore less attractive as a rock climbing area than the western part of the cliffs. The former Bureau of Parks and Recreation developed a climbing policy, with assistance from members of Maine's climbing community, to manage technical rock and ice climbing activities with the objectives of protecting the safety of park users, as well as cultural and natural resources. Should conflicts arise between rock climbers and peregrine falcon nesting, the policy could be employed to address the situation. Options include closing the climbing area during the nesting season or limiting the area where climbing is allowed, so that there is sufficient buffer to avoid disturbance of the nesting site(s).

Maintaining the old farm fields at Deer Head Farm by mowing or burning would ensure the continuance of an important element of wildlife habitat diversity on the property. Continued vehicle camping in the Deer Head Farm area would conflict with wildlife management objectives for the fields.

Several vernal pools identified during the natural resources inventory may warrant protection if they are found to be significant breeding areas.

It needs to be determined if it is feasible to take action to maintain deer yards on Farm Island and Kineo.

C. RECREATION

1. Recreation Resource Description

The discussion of recreation planning will cover: Days Academy Grant, the conservation easement along the southwest shore of Days Academy, Sugar Island, Kineo, and Farm Island.

Recreation resources on all five properties are chiefly related to Moosehead Lake and its adjacent shoreline area. The only notable exceptions are Mount Kineo and Little Kineo Mountain, which offer expansive views from the former fire tower (now a viewing platform) and summit rim, respectively.

Existing recreation facilities include:

Days Academy

- two to three party campsite (Kelly Wharf) 1/4 mile south of the Folsom Farm.
- single-party campsite in Big Duck Cove.
- rough hiking trail leading to the summit of Little Kineo Mountain.
- rough hiking trail leading to the summit of Shaw Mountain.
- *snowmobile Route #66 along the southern boundary road*
- *primitive snowmobile trails from Route #66 to Deer Head Farm/Sim's Hideaway and Kelly Wharf.*

Conservation Easement

- large log yard frequently used as a vehicle accessible campground on the west side of Cowan Cove and a gravel boat launch.
- single-party water access campsite on the east side of Cowan Cove.

Sugar Island

- three single-party water access campsites on the northeast shore of Sugar Island.

Kineo

- hiking trails, *one with snowmobile use*, to the summit of Mount Kineo
- tower on top of Mount Kineo that serves as a viewing platform.
- hiking trail around Kineo.
- multi-party campsite (three sites) at Hardscrabble Point..

Farm Island

- three single-party water access campsites on the east shore.

There is public interest in development of additional water access campsites on the lake (Maine Tomorrow Report and DOC field survey of campers - see References). The suitability of the lake shore for water access recreation development varies from poor to fair on the Days Academy and Kineo frontage, due largely to their exposure to the northwest wind, and from poor to excellent along the shores of Sugar Island and Farm Island.

All of the shoreline of Days Academy is exposed to the northwest wind making it poor to fair for campsite development. Much of the shoreline within the conservation easement is too rocky or wet to be suitable for water access campsite development. The only two sites that appear to be readily suitable have already been developed. The existing water access site on the northeast shore of Cowan Cove offers excellent camping opportunities for single-party occupancy, and needs little more than routine maintenance. There is excellent potential to add new water access campsites on Sugar Island. As indicated earlier, the terrain is well suited to this use, and several potential sites have passed a cursory examination. There is poor to fair potential on Kineo for additional campsite development. Farm Island may have potential for one or two additional campsites on its eastern shore.

The large, informally developed vehicle accessible campground on the northwest shore of Cowan Cove has, in the past, had a number of problems associated with its use. The site was originally cleared and bulldozed flat in the 1950s for use as a log yard. Wood was piled on the shore during the winter months, then after ice-out in the spring the wood was pushed onto the lake and boomed across the water to the East Outlet to be floated down the Kennebec River to the mills. It is uncertain when campers first started to use the landing, but several veteran campers have recounted using the site in the early 1960s. No formal facilities were developed, but at some point in time the Maine Forest Service began issuing fire permits to allow campers to have open campfires. In recent years, the area has reportedly been crowded (estimates of 75 camping parties have been offered) on Memorial Day, Fourth of July, and Labor Day weekends. There have also been complaints about disorderly conduct and inappropriate disposal of human waste, including dumping of RV holding tanks. Although the site developments and historic camping use both pre-date the 1973 establishment of the Land Use Regulation Commission, LURC staff have expressed an informal opinion that a development permit is required due to the increase in use. Even though the site is open, barren and sometimes crowded, a fair number of people still enjoy using it for camping. The attraction of the site is its suitability for use by camper trailers, immediate boat access to the water from a gravel launch, and the informal and free nature of the experience. The site has also been popular with tent campers, as well.

During the 1994 camping season, the Bureau implemented several interim management actions at Cowan Cove designed to improve the quality of the recreational experience. These actions, which were authorized by a LURC Development Permit included: the installation of four portable toilets, which are maintained on a regular interval; the erection of signs prohibiting camping within 75 feet of the lake to prevent erosion of the shoreline; and staffing the site with a recreation ranger to conduct public information and informal enforcement activities.

The previous unmanaged situation at Cowan Cove posed potential environmental problems and was inconsistent with the Bureau's mandate to provide a recreation experience focused on the visitor's enjoyment of the natural character of the area. Interim actions implemented in 1994 are not a permanent solution. At a minimum, there is a need to create a more permanent line demarcating the 75 foot setback from the shore, to remove the decaying cribwork along the shoreline, and to stabilize the shore. This could be accomplished with boulders, logs, or trees planted behind a temporary fence or some combination of any or all of the above. It would also be desirable to install permanent toilet facilities, and to define both single- party and group campsites using some harmonious combination of the elements used to mark the shore setback.

The gravel boat launch at Cowan Cove is consistent with the type of small boat launching facility outlined in the Bureau's Integrated Resource Policy, and is serviceable in its current condition, although it needs minor, routine maintenance.

The Deer Head Farm area has a pattern of occasional vehicle camping use similar to Cowan Cove, although the terrain is different due to its status in the distant past as a farm (no structures remain, only fields overgrown by brush). There are no recreational facilities, such as picnic tables, privies, or firerings, provided at this site. *A primitive snowmobile trail through this area provides winter access to the lake.* Due to its less open landscape, greater remoteness, the poor quality of the roads accessing the area, and the unfavorable exposure of the adjacent shoreline to northwest wind, this area has been used by fewer campers. Continued camping use of the Deer Head Farm area would conflict with realizing wildlife management objectives, because the fields are a scarce and important habitat.

The Kelly Wharf campsite can be accessed by water or over a long stretch of road. This same road also provides access to the Folsom Farm in-holding (see Map 2 - Days Academy Features), which is approximately one-quarter mile north of the campsite. The campsite is a two to three-party site with a picnic table and firering. Vehicles park on the site in view from the water.

The Little Kineo Mountain trail is an attractive recreation feature; concerns surrounding its use will be locating an accessible trailhead/parking area and evaluating impacts of hikers on peregrine falcons, if falcons are found to be using the cliffs. If the trail is maintained, some relocation might be desirable, and a general upgrading of the treadway would be required. There is a rough trail on Shaw Mountain that provides access to an open ledge. However, the trailhead is on private property (Deer Head Farm) and views from the ledge are far less expansive than those from nearby Little Kineo Mountain.

There are four trails on the Mount Kineo property (see Appendix I, Map #16) . The Carriage Road runs along the southwest shore of the peninsula and connects the private Kineo resort area to Hardscrabble Point. The Carriage Road also gives access to three trails that lead to the Kineo summit: the Indian Trail, the Bridle Trail and the North Trail. The Indian trail, which is steep and runs over open ledge, receives the most use, probably because it is nearest the resort, and there are no signs pointing to trail options further along the Carriage Road. The also popular and easier Bridle Trail leads from the former warden's (Watchman's) cabin to an intersection with the Indian Trail and also receives some snowmobile use in the winter. The Bridle Trail is inadequately marked on the Carriage Road and unmarked on the mountain, which has resulted in people taking steeper or longer routes than necessary. The North Trail, constructed in the early 1990s, connects the Kineo summit to the Hardscrabble point campsites around the northeast slope of the peninsula.

Both the Bridle Trail and the Carriage Trail pass very close to the former warden's cabin, which is now a private camp located on state property licensed to the camp owner. Public use of the camp owner's wharf to access the trails and hiker activity on these trails have reportedly interfered with the owner's enjoyment of the property. Blowdowns across the

Carriage Road near the camp have also interfered with public use of the Carriage Road. Efforts to reduce these conflicts will be necessary.

Access to the Kineo peninsula for hiking is by boat. Shuttleboat rides are available for a modest fee from vendors in both Kineo and Rockwood, and many private boats and canoes travel to the the Kineo shore, as well. Many boats travel from Rockwood to a protected tie-up at the private Kineo Docks. These docks require some improvements and permission for public use is not secured with any formal agreement. From here, hikers cross the private resort property on foot, sometimes straying onto a golf course or other private areas because a route to the state property has not been identified. The state owns an unlocated right-of-way from the docks to its Kineo property which should be located and marked to prevent further conflicts with private use.

Other boats come ashore along the Carriage Road near the Indian Trail or at Hardscrabble Point which can be difficult due to winds and the lack of docking facilities. The Bureau will consider options for providing and designating a safe docking area for public use on the peninsula.

~~There are at least three trails that access the summit of Mount Kineo: Indian Trail, Bridle Trail, and North Trail (see Appendix I, Map #16). The Indian Trail is steep and dangerous because the loose rock on the trail can cause people to lose their footing. The most frequently used trail is the Bridle Trail leading from the former fire warden's cabin to the viewing tower. This trail is steep in places, but safe for foot travel; snowmobiles have traditionally used it during the winter to access the summit. The trailhead is on a one-third acre site licensed by the Bureau to the owners of the cabin; they also own the nearby wharf, which is in poor repair. The wharf adjacent to the Bridle Trail trailhead is exposed to the northwest and west winds, which could cause damage to boats tied to it, and its private owners would prefer that the public not use it. At the north end of Kineo, there is a sand beach at the trailhead for the North Trail, which provides a better place to land and secure a small boat, although it too is subject to windy conditions. Many people access Mount Kineo by using a boat or a ferry service from Rockwood to reach the Kineo docks where they disembark and cross private land on foot to get to the State-owned land. The State owns an unlocated public right of way from the docks to the State-owned land which~~

~~should be located. Since hiking trails are not clearly marked on the summit of Mount Kineo, hikers can be confused as to which trail to take to return to the Kineo Docks, and inadvertently take the North Trail, which considerably extends the length of their hike.~~

There does not appear to be good potential for developing hiking trails on Sugar Island or Farm Island due to lack of an attractive destination, such as an open summit providing views of the surrounding area.

While there are no maintained snowmobile trails on Days Academy, snowmobiles can use the old woods roads, except when they are plowed to facilitate the trucking of wood. The Bureau does not allow snowmobiling on plowed roads anywhere on public lands because of safety concerns.

2. Recreation Management Issues

~~There are additional-need opportunities for water access campsites on Moosehead Lake, according to a Maine Tomorrow report (see Appendix III, reference 14.).~~ Physically suitable locations have been identified on Farm Island and Sugar Island where sites could be developed.

A plan to stabilize the shoreline, delineate the location of campsites, and provide for other related facilities should be developed for the Cowan Cove vehicle access campground. The plan should be developed in light of a carrying capacity for the site that will improve the recreational experience for users. In addition, the gravel boat launch currently needs improvement due to surface erosion, and will need periodic maintenance to keep it in a serviceable condition.

Continued vehicle access camping in the Deer Head Farm area would conflict with wildlife management objectives for the old fields. Vehicle access to the area could result in human disturbance to wildlife using the old fields, and it would be difficult to control the creation of bootleg campsites in the fields or to prevent vehicles from driving off access roads through open field areas and damaging vegetation.

The Bureau should assess the need to make improvements to the hiking trails leading to the summit of Little Kineo Mountain.

The Bureau should work with the private land owner on Kineo peninsula to locate and mark the public right-of-way from Kineo Cove to the State-owned land and *to provide a public*

docking facility. For Mount Kineo trail users, signage should be improved for all trails so that hikers are guided onto the appropriate trail, and public and private use conflicts at the site of the old warden's camp should be resolved.

D. VISUAL RESOURCES

1. Visual Resource Description

Two elevations on the properties offer excellent vistas; outstanding among these is the viewing tower atop Mount Kineo. The tower was refurbished in the early 1990s by removing two sections of the tower, replacing bolts, painting, and installing a viewing platform. From the platform the observer has a 360 degree view of the region, taking in Days Academy, Kineo, and Farm Island. From atop the open balds on Little Kineo Mountain are views to the west, south, and east.

2. Visual Resource Management Issues

During the planning process the Bureau carefully considers the potential impacts of management activities, including timber harvesting, gravel mining, road construction, and recreation facility development on the visual character of an area. These activities, if not planned and conducted in a sensitive manner, could have significant adverse effects on the visual resources of the property.

Timber harvests, where visible from vantage points, will need to be conducted in a way that leaves a residual stand that appears to the casual observer to blend in with the surrounding landscape.

E. TIMBER

1. Timber Resource Description

Days Academy -- The Bureau has not collected much quantitative information about the timber resource on Days Academy. Examination of aerial photos and a limited reconnaissance survey found that the parcel is dominated by hardwood type (50%) with lesser amounts of mixed wood (40%), and a minor amount of softwood type (10%). Where softwoods occur, they are mostly found in small pockets left from previous extensive cutting. They are primarily residual

stands or advanced regeneration; some of the regeneration stands have received pre-commercial timber stand improvement work.

In the southern third of the property, much of the hardwood and mixed wood types occur on medium quality growing sites, and are made up of tolerant species such as red maple, sugar maple, beech, and yellow birch. Where the cutting was heavy, the species shift to the intolerants such as white birch and aspen.

The south and east facing slopes of Shaw Mountain tend to have better quality sites. Unfortunately, these areas were also cut hard during the most recent timber harvest, so they are now stocked with a higher density of lower quality stems.

The stands in the central third of the parcel around the lower slopes of Little Kineo Mountain are primarily hardwood type, consisting of good to excellent northern hardwoods on some excellent sites that are somewhat better on the west side of the mountain than on the east side. On the lower slopes of the mountain the area is now mixed wood in the younger age classes, which is a result of softwood cutting from the last harvest entry.

The western part of the property, stretching between Mount Kineo Inc. and Folsom Farm and bordering along the Moosehead Lake shoreline, was once occupied by several farms that have either reverted naturally to forest cover or were planted to Norway spruce. Much of the original planted area has been harvested with only a small remnant left along the shore. Inland of the old fields is generally flat terrain that tends to be of lower than average site quality, which is growing intolerant hardwoods currently over-topping mixed regeneration.

The northern third of Days Academy is split into two areas, the northeast section which slopes steeply to the lake, and the northwest section which is relatively flat. In this northeast area there is operable mixed wood and hardwood stands that were cut through by the previous owner, but not as heavily as in the northwest section. The northwest section has former softwood stands that were cut very heavily, leaving a thin overstory of poor quality hardwood over fairly dense mixed spruce, fir, aspen, white birch, and pine regeneration. It is in this northwest area that most of the pockets of residual spruce occur.

Sugar Island -- Several years ago the Bureau conducted a timber inventory on Sugar Island. The timber resource is 75% hardwood, 15% mixed wood, 10% softwood, and 5% either bog or ledge. About 10 to 15% of the island is visible from Moosehead Lake, and shoreline areas are heavily used for recreation.

The southern third of the island has two knolls; the southeastern one, being the highest, steepest, and facing Lily Bay State Park, is the most visually sensitive portion of the island. This area has some above average quality sites and is growing a large hardwood stand with a high percentage of sawlog-sized stems. This stand offers maximum potential for practicing good silviculture while minimizing visual impacts.

The southwestern knoll and southern tip of the island are where some of the last and heaviest harvesting occurred. This area has had much of the merchantable softwood removed, resulting in a high percentage of two-storied mixed wood stands with good, advanced, softwood regeneration.

The central third of the island is drained by a couple of small streams, one flowing easterly to Galusha Cove and the other flowing westerly. This low elevation area has some of the wetter, lower quality growing sites. Prior to the mid 1960's harvest, this area had some of the largest and heaviest stocked softwood stands. The current young, mixed wood stands developed from the regeneration following budworm salvage harvesting and/or mortality.

The northern third of the island has above average site quality, and is also the area where the least amount of harvesting occurred in the late 1960s. The current softwood stands, remnants of much larger stands, survived the 1960's harvest as bypassed patches because the trees in these stands were too small to cut at that time. For the most part, the resulting regeneration in this northern area is mixed, intolerant hardwoods overtopping spruce and fir. The hardwood areas were only lightly cut for sawlogs in most places, resulting in well-stocked high quality hardwood stands.

Wood harvested from the island was yarded over the ice to the Lily Bay Landing, which is now part of Lily Bay State Park, and to other nearby locations. It has not been operated since the 1960s.

In total, about three-fourths of the island has good to very good sites and is suitable for growing high quality forest products; however, access is a problem that will affect product value.

Kineo -- The forest types of the 800-acre Kineo parcel are 75% hardwood, 25% softwood, and 12% mixed wood. The entire peninsula slopes from the top Mount Kineo to a softwood flat in the north central area. Most of the softwood stand on the southern end of the property is growing on ledge on Mount Kineo.

Aside from the softwood stands on top of Mount Kineo and in the north central area, and a fringe of mixed wood bordering the north central softwoods, hardwoods dominate the peninsula. The eastern side of the peninsula is a fire-origin stand of white birch and aspen, approximately 60 years old, overtopping fir and spruce. The rest of the hardwood is found in large, uneven-aged stands, containing a high proportion of sawlogs, with a relatively small component of mid-sized pole stems. Overall, the hardwood quality is generally good, and species include sugar maple, beech, yellow birch, and red maple. Sites on the mid slopes of Mount Kineo appear to be above average in quality.

The southern softwood stand growing on Mount Kineo ledge is characteristic of a mountaintop spruce stand. This thin-soiled, ledgy, exposed site has smaller diameter, old spruce stems dominating the stand, which is generally low quality due to site and age.

The northern softwood stand has been reducing in size because its aging balsam fir component has been subject to blowdown. At this time, the fir has almost completely died out or fallen down. Blowdown is continuing in the spruce component of the stand with drastic results to the overall stand integrity. The regeneration is irregular, at best, with the highest percentage being intolerant hardwoods, as well as nonmerchantable hardwood interspersed with patches of spruce-fir. The site quality in this area is low.

The mixed wood stands are generally the residuals left from the dying softwood type; species include red maple, beech, and sugar maple, mixed with spruce, and a minor component of hemlock. The site quality in this area is only fair.

Farm Island -- Most of the island's 980 acres were harvested in the early 1960s for all high value species and products which could be utilized at that time. The resulting stand

conditions are more a result of past practices than a reflection of site quality. Today, common species include beech, red maple, white birch, red spruce, and balsam fir, with abundant advanced regeneration and small poles well represented in the mix of size classes.

In the hardwood stands (778 acres) the primary tree species are beech, red maple, and sugar maple with a small component of yellow birch. Site quality is above average; however, the stem quality is generally very low due to past harvesting practices.

The softwood stands (102 acres) are the residual stems left from the last harvest that were not merchantable at that time. Red spruce, fir, and to a lesser amount cedar and hemlock make up the softwood stands, which are growing on the poorer and wetter sites of the island.

Today, the island's mixed wood stands (100 acres) are heavy to hardwoods because they predominated over softwood before the last harvest. These stands are now primarily low quality hardwoods, mainly beech and red maple mixed with spruce and fir. Site quality is slightly better than in the softwood areas, but not as good as in the hardwood areas.

2. Timber Management Issues

Any timber harvesting on Days Academy and Sugar Island will have to be sensitive to recreation, wildlife, and visual considerations.

The Days Academy property has the long-term potential to produce substantial volumes of timber, but because it was cut so heavily in the recent past the Bureau will need to make several entries over a considerable period of time to improve the existing stands. The flow of timber products in the near term will be modest.

Sugar Island has the potential for growing high quality timber, and this use should be considered among other uses when making resource allocations.

Because of their status as park lands, both Kineo and Farm Island have legislatively imposed limitations on timber harvesting. Timber management on park lands can be undertaken to provide wood for the use of the Bureau; to meet deed requirements; to preserve their natural, recreational, and scenic qualities; to improve wildlife habitat; to control insect infestation and disease; to reduce the risk of fire and other hazards; or to demonstrate exemplary multiple use forest management techniques. The primary reason to manage timber on Kineo and Farm would

be to increase the softwood component of the mixed wood stands in the deer yards to improve their long-term winter shelter value, which is an appropriate goal in concert with the legislative mandate. Harvesting timber to maintain the deer yards would have to be done in a visually sensitive manner, since these areas are visible from Mount Kineo, Little Kineo Mountain, and Shaw Mountain.

III. RESOURCE ALLOCATION AND MANAGEMENT RECOMMENDATIONS

compartment resources.

This plan is the first step in the planning process; it presents the conceptual basis for managing the Moosehead Lake Public Reserved Land's resources. The Legislature has directed ". . . that the Public Reserved Lands shall be managed under the principles of multiple-use and to produce a sustained yield of products and services. . ." (see Appendix III, reference 5). In response, the Bureau has developed a multiple-use management system based on the allocation of certain areas for specific uses. Because of the nature of multiple-use management, these areas frequently overlap, creating zones where management is designed to accommodate a variety of uses. In such areas, the objectives for each type of use will be defined. To resolve potential conflicts, a dominant use is identified; this dominant use takes priority over all other uses, which become secondary uses. Where a use is planned to be secondary, it will be managed in such a way as to not adversely affect the dominant use. The dominant use is determined according to the relative level of sensitivity of the specific area under consideration and the degree of impact of the proposed use on the area. The use which requires the more careful management will typically dominate. The priority sequence for establishing dominant use areas from the most sensitive to the least sensitive designation is: 1) Special Protection; 2) Backcountry Recreation; 3) Wildlife Management; 4) Remote Recreation; 5) General Recreation; 6) Visual Consideration; and (7) Timber Management.

This dominant use system is applied in this plan to Kineo and Farm Island, which are statutorily designated as park lands, to protect special resources and visual resources, and to manage wildlife and recreation resources. The next section explains what each designation encompasses and how it is applied to the Moosehead Lake properties.

B. APPLICATION OF THE RESOURCE ALLOCATION SYSTEM TO THE PROPERTIES

The maps in Appendix I of the plan depict the allocation of various areas on the properties for various purposes including special protection, wildlife, recreation, and timber. No single map exists to show all of the uses, as the overlap of the various uses would be too confusing. It is important for the reader to bear in mind that a particular area may be used for more than one purpose. In such cases, the dominant use will be determined by the priority sequence as explained in Section III. A. above.

The Bureau has formulated a long-term vision, in light of the resources and public uses on the properties, to guide management for the next 10 years and beyond.

Vision Statement: The Bureau's primary goals in managing the Moosehead Lake properties will be: to protect special resources such as rare plants, animals, and archaeological sites; to protect important natural communities; to provide opportunities for remote recreational use; to maintain and where feasible enhance the quality of wildlife habitats; to support traditional fishing and hunting uses; and to manage forest resources to provide a sustained yield of high-value products.

1) SPECIAL PROTECTION (See Appendix I, Maps 5, 6, and 7 - Special Protection Areas)

Special Protection areas include locations containing rare and endangered species of wildlife and/or plants, geological formations, and other notable natural features, and valuable archaeological, educational, scientific, or historic sites. Discrete areas with important natural communities or that have outstanding examples of a collection of natural community types may, if other allocations would not provide adequate protection, be protected by the Special Protection designation. Management of Special Protection areas is always protective in nature.

Special Protection Areas Designated as the Dominant Use on the Property: The boundaries of important natural communities will be delineated on the ground---based on the locations shown on the maps contained in the natural resource inventories---prior to conducting any management activities that could adversely impact them.

Natural communities/sites to be protected by the Special Protection designation (see Appendix I, Maps 5 and 7, and Table 1., page 23) include the following numbered sites in Table 1: 1. Little Kineo Mountain; 2. Base of Little Kineo Cliffs; 3. Forest Slope of Shaw Mountain; and 6. Mount Kineo.

Sites 1 and 2 in Table 1. Little Kineo Mountain and Base of Little Kineo Cliffs - The protection zone on the top of Little Kineo Mountain includes the acidic summit and cliff community (35 acres), the base of Little Kineo Cliffs (75 acres); and all other land above the 1400 foot contour to provide protection to the entire summit, steep mountain slopes, and potential peregrine falcon nest sites; the above areas encompass 330 acres.

Site 3 in Table 1. - Forest on slope of Shaw Mt. - has mature northern hardwood forest and a stand of mature hemlock with 12-18 inch dbhs, which in time will become an old growth stand (60 acres) .

Site 4 in Table 1. - Base of Shaw Mountain (NE side) - has an exceptionally large population of club-spur orchid growing along the shoulders of the road. While this orchid is not state-listed, it is an interesting and unusually large population. Any improvements to the road should be done in a manner that will ensure the perpetuation of the orchid population.

Site 5 in Table 1. - Sugar Island un-named watershed on west side - has three areas of interest--an older hemlock stand, a balsam fir stand with large trees, and beaver flowages--that are significant for Sugar Island, but not significant in a regional context. Management activities will be considerate of the values of these areas; however, they will not be designated as Special Protection. In total, areas allocated for Special Protection encompass 390 acres.

Special cultural resource sites to be protected by the Special Protection designation include four prehistoric archaeological sites (see Appendix I, Maps 5, 6, and 7, and Table 2., page 24): two on Cowan Point, one site on the south end of Sugar Island, and one site on the

south end of Farm Island. The exact location of these sites will not be shown on the Special Protection maps in Appendix I, rather a band will indicated the general area in which a site is located to protect it from disturbance.

Because of the exposed nature of most of the shoreline of the properties the only likely location for loon nest sites is in Cowan Cove on the conservation easement property. If any nest sites are identified they will be placed in a Special Protection zone 660 feet in radius around the nest site. In this zone the Bureau will not establish campsites. All management activities planned to be undertaken in these Special Protection areas will be discussed, prior to implementation, with DIF&W personnel and their recommendations followed.

Secondary Uses within Special Protection Areas: Because of their typically sensitive nature, Special Protection areas can seldom accommodate active manipulation or intensive use. No secondary uses other than scientific research and dispersed recreation will be allowed in Special Protection areas.

Other Specific Management Recommendations: If loon nesting sites are identified on any of the properties, they will be protected by designating an area encompassing a 660 foot radius around the nests as Special Protection during the nesting season from April 15 to August 15.

Use of Little Kineo cliffs by peregrine falcons should be assessed, and if they are found to be using the cliffs, then steps should be taken to route hikers away from the nesting site(s) during the nesting period. This could be accomplished by a combination of signs and trail blazes.

Timber harvesting, road construction, and campsite development will not occur in the special cultural resource sites. The exact location of these sites will be provided to regional staff to assist them in planning management activities to avoid them and for monitoring purposes.

2) BACKCOUNTRY RECREATION

The Bureau classifies the capability of lands it manages to support recreation into three broad categories: Backcountry Recreation; Remote Recreation; and General Recreation. Backcountry areas are defined below, while Remote Recreation areas and General Recreation

areas are defined on pages 56 and 58, respectively. Backcountry areas are relatively large, extraordinary in terms of scenic quality, remoteness and natural character, and are managed for primitive recreation without public vehicle access. The main objective of Bureau management of Backcountry areas is to retain the area's natural character. Secondary uses in a Backcountry area are more restricted than in a Remote Recreation area; where allowed, timber harvesting is generally conducted using an uneven-aged system.

Backcountry Areas Designated as the Dominant Use: There are no extensive areas on the properties with a wilderness-like character that can offer opportunities for people to enjoy multi-day backcountry recreational experiences.

3. WILDLIFE MANAGEMENT (See Appendix I, Maps 8, 9, and 10 - Wildlife Areas)

Wildlife management efforts by the Bureau are coordinated with the DIF&W, the lead State agency for management of these resources. The Bureau's Integrated Resource Policy provides the basic policy guidance used in managing fish and wildlife resources on public lands. In addition, through a DIF&W position assigned to the Bureau, the two agencies have developed the document Wildlife Guidelines, which establishes the specific management strategies for coordinating wildlife management with other management activities on Maine's Public Lands. The properties have the potential to provide good to excellent habitats for many species of wildlife.

Important wildlife areas include wetlands, riparian zones, deer yards, and other special habitats. The following describes management goals and objectives for the various wildlife habitats.

Wildlife Management Areas Designated as the Dominant Use on the Properties:

Riparian and Wetland Areas - The forest edge around lakes, ponds, wetlands, rivers, and streams makes up the riparian zone. These areas are among the most productive of the forest environment because in addition to providing habitat for certain range-limited species they also serve as wildlife travel corridors connecting watersheds and providing access to adjacent uplands. The Bureau protects riparian zones by designating a 330 foot wide area around or along major water bodies; in this area wildlife is the dominant use. On smaller water bodies and

intermittent streams, that are unlikely to serve as major travel corridors for large mammals, the riparian zone may be reduced to a width of 75 feet with the approval of the staff Wildlife Specialist.

Vernal pools are special kind of wetland identified during the natural resources inventory. These pools are shallow depressions that fill with meltwater in the spring and dry up later in the summer or early fall. They are very important breeding habitat for spotted and blue-spotted salamanders and the wood frog. They are also utilized extensively by many other species of amphibian and reptile. Land management activities in or near a vernal pool that change any of its characteristics may negatively impact its suitability for breeding habitat. Management guidelines that conserve vernal pools are currently being developed cooperatively with the Department of Inland Fisheries and Wildlife and will eventually be adopted by the Bureau for the lands that it manages.

By Bureau policy, timber harvesting in riparian zones is accomplished by uneven-aged methods; where harvesting takes place it is specifically planned to benefit wildlife, and must be approved by the staff Wildlife Specialist. In riparian zones wildlife management is the dominant use, and other uses such as recreation and timber management are secondary uses.

Existing habitat quality and condition determines whether the riparian zone is managed or not during each management cycle. Timber management in most riparian areas will be accomplished by single tree and group selection removal, primarily designed to enhance diversity and cover conditions for wildlife. The first 75 feet of the zone may be lightly harvested, or not at all, depending on the recommendation of the staff Wildlife Specialist, to retain shade over water courses and avoid siltation. In major riparian zones the remainder may be managed by uneven-aged methods. Management will be undertaken in such a way that visual amenities are protected. Selected tall softwood trees, especially white pine, in riparian areas will be retained for perching, roosting, and nesting by eagles and other raptors.

The areas designated as major riparian zones are shown on Maps 8, 9, and 10, Appendix I. Minor riparian zones adjacent to brooks and around small wetlands will be identified during the compartment examination process and protected. Specifically, the following important

natural aquatic communities will be protected by major riparian zoning: the Moosehead Lake frontage of the Days Academy property; and the entire shorelines of Kineo, Farm Island, and Sugar Island.

Deer Wintering Areas - Deer wintering areas or deer yards, as they are also called, are often associated with riparian zones and may encompass adjacent upland areas with softwood cover. Deer use defines the limits of the yards, which may "expand" or "contract" from time to time depending on snow conditions, other weather extremes, and harvesting activities. There are 524 acres of LURC-zoned deer yards (P-FW) on the park properties (Kineo -- 173 acres and Farm Island -- 351 acres). Because these lands are statutorily designated as park land there are restrictions on timber management activities. Timber can be harvested to enhance wildlife habitats; however, it is unlikely that a timber harvest in these deer yards could generate enough revenue to cover costs because of the access problems, small areas involved, and quality and volume of the timber resource. Creation of long-term winter shelter would need to be subsidized by revenues from other sources. The Wildlife Specialist in conjunction with the regional manager and district forester will determine if harvesting in the deer yards on Farm Island and Kineo is warranted to maintain their long-term winter shelter value, and if warranted, pursue the most effective means to accomplish this objective.

Forested areas - No other forested areas on the properties will be allocated specifically for wildlife; however, the Bureau will employ the Wildlife Guidelines in planning timber harvests to benefit wildlife wherever timber is managed.

The Bureau will manage timber on the Public Reserved Lands with the objective of maintaining a diversity of stand types across the landscape to ensure that habitats are maintained for resident wildlife species. In a few areas, the Bureau will seek to increase softwood to provide additional, long-term deer winter shelter.

Mast, such as beechnuts, are an extremely important food source for many species of wildlife in this part of the state. Where practical, timber management prescriptions will favor mast production.

Open fields - Open fields are a scarce habitat type in the Moosehead Lake region.

Reverting agricultural fields provide an additional element in the habitat diversity of the Days Academy property, and the fields may be used by birds of prey as hunting sites. The primary prey of peregrine falcons are small birds, which are often found in open field areas. The fields on the Days Academy property also have abandoned apple trees that provide fruit sought by many species of wildlife. To maintain the value of the open fields for wildlife, they must be kept from reverting to forest cover by burning or mowing. To maintain fruit production on the apple trees, they must be released from competing vegetation and pruned to enhance fruit size. The open fields in the Deer Head Farm area will be designated as a Wildlife Management Area, and managed to maintain their value to wildlife in the area.

Secondary Uses within Wildlife Management Areas: Recreation and timber management are important secondary uses in most forested wildlife areas. A diversity of wildlife species, balanced population levels, and healthy animals are among the benefits of sound wildlife management. Timber harvesting is a key management tool that benefits wildlife through forest habitat development and maintenance. Harvesting in designated wildlife areas will be incorporated within the Bureau's timber program, and will be designed for particular wildlife benefits by the Bureau's Wildlife Specialist. Recreational use of forested wildlife dominant areas typically includes hiking, camping, fishing, hunting, and sight-seeing.

Open field areas need to be maintained primarily in grass and herbaceous species to provide habitat diversity for wildlife. Use by campers with recreational vehicles could diminish the value of the fields due to direct disturbance of wildlife, driving over grassy areas, creation of bootleg campsites, and damage to apple trees. Less intensive uses such as hunting, bird watching, and hiking will not conflict with the designation of the fields as a wildlife dominant area.

Other Specific Management Recommendations: Throughout the non-wildlife dominant areas of the properties, wildlife habitat will be managed under the general guidelines for forest management activities. These guidelines are described in the Bureau's Integrated Resource Policies and Wildlife Guidelines, and include the following requirements: to create

and maintain a diversity of vegetation; to seed disturbed areas, such as logging roads, with a herbaceous seed mix to prevent erosion and provide wildlife food; to preserve den trees and snags for wildlife; and for the staff Wildlife Specialist to make specific recommendations for wildlife habitat improvements as opportunities are identified.

To protect the value of the Deer Head Farm fields for wildlife, the area will be managed to prevent general public vehicle use and camping. Vehicle access for the in-holding will be maintained.

4. REMOTE RECREATION (See Appendix I, Maps 11, 12, and 13 - Recreation Use Areas)

Remote Recreation areas are managed for low intensity, dispersed recreation, and contain significant natural resource values; public access is by foot only. Where recreation facilities are provided they are typically rustic in nature. Secondary uses in a Remote Recreation area are less restricted than in a Backcountry area, and in general, these areas are smaller than Backcountry areas. Remote Recreation areas usually include travel/visual zones along trails or shorelines; however, they may encompass extensive areas or entire properties, if the properties are small and primarily allocated for recreational uses.

Remote Recreation Areas Designated as the Dominant Use: The entire shoreline of the Days Academy property (including the conservation easement lands), except for the Cowan Cove vehicle accessible campground and the campsite at Kelly Wharf, is designated as Remote Recreation. In addition, the hiking trail up Little Kineo Mountain will also be designated Remote Recreation. The entire shoreline of Sugar Island is designated Remote Recreation. The Kineo property and Farm Island, in their entirety, are designated Remote Recreation. Remote Recreation areas are shown on Maps 11, 12, and 13.

Secondary Uses in Remote Recreation Areas: Timber harvesting can be a compatible secondary use within Remote Recreation areas, subject to management constraints. Primary goals of harvesting in Remote Recreation areas are to enhance recreational values and wildlife habitat, while permitting limited management of timber.

Other Specific Management Recommendations:

Maintain the multi-party campsite at Hardscrabble Point on Kineo. The single-party campsites in Big Duck Cove and Cowan Cove will also be maintained; no substantial improvements are necessary. The three single-party water access campsites on the northeast shore of Sugar Island and another three on the east shore of Farm Island will be maintained. A few additional campsites will be developed on the shorelines of Sugar and Farm Islands. On the south end of Farm Island a few dilapidated camp buildings nearby the existing campsite will be removed.

The rough hiking trail leading to the summit of Little Kineo Mountain will be maintained and where necessary relocated to avoid steep or rough areas. Should peregrine falcons be found to be nesting on the Little Kineo cliffs, hiking activity will be directed by trail routing and/or signs to avoid the nesting area.

The four hiking trails on the Mount Kineo property will be maintained and where necessary, improved or rerouted to avoid steep areas, improve safety, and reduce erosion. Old trails near peregrine areas will be brushed over to prevent public use. The Bureau will work with the private camp owner to reduce conflicts with trail users at that location. ~~The North Trail will also be maintained. The Indian Trail is reported to be steep and difficult to traverse, and its use may need to be discouraged by appropriate signage or other means. (Further field work will be undertaken during the summer of 1996 to assess its condition).~~ The Bureau will also work with the private landowner on Kineo peninsula to locate and mark a right-of-way for public access the state property and to discuss improvements to and public use of the Kineo docks.

5. GENERAL RECREATION (See Appendix I, Maps 14, 15, and 16 - Recreation Facilities)

Bureau policy defines General Recreation areas as those being managed for medium-density recreational use levels. This recreation designation allows for vehicle access, and typically the facilities provided are somewhat primitive, but tend to be more developed than Backcountry/Remote Recreation facilities.

General Recreation Areas Designated as the Dominant Use: The General Recreation designation will be applied to Cowan Cove and Kelly Wharf vehicle accessible campsites, and to

the Little Kineo Mountain trailhead parking area. General Recreation areas are shown on Maps 14, 15, and 16.

Secondary Uses in General Recreation Areas: Timber and wildlife management are often compatible secondary uses within a General Recreation area. To the extent that any management does take place, it will take into account visual, wildlife, and safety considerations. For example, wherever possible around parking areas a herbaceous seed mix will be used to stabilize the soil surface and lessen the visual impact of human disturbance.

Other Specific Management Recommendations: Sign boards on which information will be posted regarding recreation facilities and the Bureau's rules concerning public use of the properties will be maintained at the Rockwood boat launch, Lily Bay State Park, *Kineo* and other appropriate locations.

Vehicle access camping will continue at Kelly Wharf, and parking will be created on the landward side of the road to provide more open space on the site and to reduce visibility of vehicles as seen from the water.

The Cowan Cove campground will be redesigned to provide adequate space for RV campers and tents in designated campsites set back at least 75 feet from the shore. The cribwork along the shoreline will be removed, since it no longer functions to reduce erosion of the shoreline. The shoreline will be sloped and stabilized to prevent further erosion and to improve the appearance of the site. The existing gravel boat launch will be maintained in serviceable condition.

A small vehicle parking area will be constructed at the Little Kineo Mountain trailhead.

6. VISUAL CONSIDERATION (See Appendix I, Maps 17, 18, and 19 - Visual Consideration Areas)

Many Bureau-managed properties have natural settings that are intrinsic to the enjoyment of recreational users. Roads and gravel pits, timber harvests which create large openings, and stumps and slash detract significantly from the visual enjoyment of an area. To protect the land's aesthetic character, the Bureau uses a two-tier classification system based on the sensitivity of

the visual resource to be protected to guide management planning. Scenic areas are classified as either Visual Class I or Visual Class II.

Visual Class I areas are the most visually sensitive. The natural character of features in the foreground have a direct effect on visual enjoyment. These areas receive the highest priority with regard to mitigating the visual effects of management activities. Timber harvesting in Visual Class I areas is permitted under stringent limitations aimed at retaining the appearance of an essentially undisturbed forest. Openings will be contoured to the lay of the land and limited to a size that will maintain a natural forested appearance. Within trail corridors, stumps may be required to be cut at ground level or covered with dead branches. Branches, tops and other slash will be pulled well back from any trails. To enhance visual enjoyment in Class I areas, individual trees or small groups may be removed in some locations, particularly along trails, to provide scenic vistas.

Visual Class II areas are visually less sensitive than Class I areas. Class II areas typically include views of forest canopies from a ridgeline or the forest interior as it fades from the foreground of the observer. Interior views beyond the Visual Class I zone are likely to be seen from a trail or when the hiker leaves a trail to bushwhack through the woods. Class II areas are less sensitive to change from the visual standpoint of the observer, but will nonetheless be managed to avoid creating any obvious alterations to the landscape. The casual observer may notice a slight change in the character of the area following timber harvesting or road building activities, but the alteration will be as minimal as practicable. Openings will be of such a size and orientation as to not unduly draw attention, and slash will be kept low to the ground.

The Bureau's Integrated Resource Policy calls for the coordination of all timber harvesting operations with staff specialists, including the Recreation Specialist who is responsible for making visual resource management recommendations.

Visual Consideration Areas Designated as the Dominant Use: Class I Visual zoning will overlie all Remote Recreation areas. Also, Class I Visual zoning will be applied along all public access and management roads on the Days Academy property. Class I Visual zoning will

also encompass portions of Little Kineo and Shaw Mountains. On Sugar Island, in addition to the Visual Class I zoning along the shoreline, four other areas with slopes visible from the lake will also be so designated.

Class II Visual zoning will overlies areas east and west of Little Kineo Mountain and south of Shaw Mountain. The Visual Class II zoning recognizes the visual sensitivity of these areas as seen from Mount Kineo, Little Kineo Mountain, and Shaw Mountain. Visual Class I and II areas are shown on Maps 17, 18, and 19.

Secondary Uses in Visual Consideration Areas: In Visual Consideration areas where other more restrictive provisions do not apply, recreation, road construction, and timber harvesting are permissible uses. Where it can occur, timber harvesting will be as unobtrusive as possible, while still enhancing forest growth and regeneration.

Other Specific Management Recommendations: The Recreation Specialist when laying out hiking trails will use topographic high points, such as ridgelines and ledge outcrops, to provide opportunities for distant vistas.

7. TIMBER (See Appendix I, Maps 20, 21, and 22 - Timber Management Areas)

Where no other use is dominant an area will be managed primarily for timber, as long as the area is suitable for timber production under the Bureau's policies for timber management. Where other uses are dominant, timber will be managed as a secondary use, so long as it can be conducted in a way that does not conflict with the dominant use. In all Special Protection areas no timber management activities will occur.

In general, the Bureau manages timber on Public Reserved Lands based on long rotations --creating several age classes--with the objective of producing sustained yields of high quality forest products, such as saw logs and veneer. The Bureau seeks to maintain timber types that best utilize each site. This management approach creates diversity in the forest, which benefits the forest ecosystem, improves wildlife habitats, and provides natural barriers against the spread of disease and insects resulting in healthier, more vigorous forest growth.

Multiple use prescriptions are developed for each compartment on a unit based on a field examination of the natural resources present. Prescriptions are prepared by the district forester

and reviewed by an inter-disciplinary team of resource professionals to ensure that all land management activities maximize opportunities to benefit recreation and wildlife resources on the compartment, and are silviculturally appropriate for the timber stand conditions. Forest stand conditions, site quality, and management history require that a variety of timber management systems be use. Clear-cutting is infrequently employed, and on an annual basis is generally applied to less than one percent of the land area harvested by the Bureau. The Bureau, most often using a bid system, contracts with private loggers to harvest timber on public lands. Bureau resource professionals mark or designate all trees to be harvested, and check frequently during the conduct of harvest operations to ensure that the contract requirements are being followed, and that the necessary means to protect the environment are being employed.

Timber Management on the Property: The main timber management objective for the Public Reserved Lands will be the commercial production of the highest possible quality timber using sound silvicultural practices. Timber harvest planning will consider the visual effects of harvesting and avoid conflicts with recreational objectives. Harvesting will employ a variety of management techniques, uneven-aged as well as even-aged, to attain the desired objectives for timber, wildlife, and recreation in light of the constraints of each site.

Although much of Days Academy has been extensively harvested in the past, it has substantial potential to produce a variety of forest products. In the near term, hardwood products will dominate; in time softwood regeneration and careful management will increase the flow of spruce, fir, pine, and hemlock.

Three-fourths of Sugar Island has good to very good sites suitable for growing high quality forest products. While access is a problem that will affect product value, the island has been harvested in the past, and can be managed in the future to produce a sustained yield of forest products. Timber harvest prescriptions will need to take into account the Remote Recreation/Visual Class I designation of the island's shoreline, and the Visual Class I designation of four other areas in the interior. *Harvesting will be conducted in a manner that has minimal visual impact as seen from the lake, and no impact in the immediate vicinity of the shoreline campsites.* Timber management activities will incorporate wildlife benefits. Timber

harvested from the island will be yarded across the ice to a mainland location and sorted for trucking. Timber harvesting on Kineo and Farm Island may be conducted to improve the long-term winter shelter value of the deer yards, if warranted, and the production of timber will not be a primary reason for harvesting.

Other Specific Management Recommendations: The boundaries of Special Protection areas will be delineated at the time an adjacent area is being prepared for a timber sale if there is a likelihood that harvesting activities could impact sensitive resource values.

IV. ADMINISTRATIVE CONCERNS

Reserved Lands for public recreational use and to
nt consideration. Days Academy does not have
ownership is bordered by privately-owned land. S.D.
ted use right of way for public access to the Days
ment land over roads on its property extending
from the Ripogenus Dam Road to Cowan Cove (campground). This right of way is subject to
S.D. Warren's policy on public use of its roads: access may be restricted by S.D. Warren for
limited periods of time when reasonably necessary to protect the safety of people or property.

Likewise, there is no public vehicle access to Kineo. Access to the State-owned portion
of Kineo is by water (*or over the ice in winter*). The nearest public boat launch is the State-
owned boat ramp in Rockwood. Boats can land at the docks in Kineo Cove, *along the Carriage
Road near the Indian Trail*, or at Hardscrabble Point. *Boats landing at the private wharf at the
firewarden's camp have been a problem for the private owner, and winds make landing along
much of the southwest shore difficult.*

Access to Farm Island can also be gained by launching from Rockwood or other
locations around the lake. In winter, area residents mark a travelway over the ice, once the lake
is sufficiently frozen, from the Rockwood boat launch area three quarters of a mile to Kineo.

Access to Sugar Island is most conveniently gained by launching from one of the two
boat launches at Lily Bay Park State Park. Depending on which launch site is used, the travel
distance across the water to the island is either a half mile or one mile. From the Lily Bay State
Park launch site in Rowell Cove the distance across the water to the southern most campsite on
the eastern side of Sugar Island is approximately two miles.

Road Maintenance

The Bureau has two broad categories of roads, public access and management. Public
access roads provide for public vehicle access into and around on Public Reserved Lands, and

are developed and maintained to different standards than management roads. Management roads are designed for timber management and administrative use, and may be taken out of service at the conclusion of operations.

Existing roads on Days Academy designated for public access will be improved during the 10-year planning period and maintained to the Bureau's standards for this class of road, and both sides of these roads will be zoned Visual Class I. Existing roads designated as management roads may be used by the public as long as they remain in service for administrative purposes and where there is no likelihood of compromising high quality recreational experiences, the integrity of areas containing special resources, or environmental regulations. Along main artery management roads, which have extended periods of use, aesthetic and visual concerns related to timber harvesting will be considered in the compartment examination and prescription process.

B. FIRE CONTROL

The Bureau will coordinate with the Maine Forest Service in planning for the prevention and control of forest fires on the Moosehead Lake properties. Such efforts are undertaken on a regional basis, and intended to ensure that Department of Conservation staff and equipment can respond quickly to fires.

This plan describes the major features of the Moosehead Lake Public Reserved Lands and the State park lands--Kineo and Farm Island--and identifies how the Bureau of Parks and Lands proposes to manage their resources and uses. The plan contains the following specific recommendations.

Resource Allocation and Management Recommendations:

Special Protection (See page 46)

* Four important natural areas encompassing 390 acres will be designated as Special Protection areas where no timber harvesting, road construction or other development activities will occur. (The 390 acres does not include the Mount Kineo Cliff area.)

* Special cultural resource sites on Cowan Point, south end of Sugar Island, and the south end of Farm Island will be designated Special Protection.

* Assess peregrine falcon use of Little Kineo Mountain cliffs; if falcons are found to be using the cliffs then take steps to route hikers away from the nesting area.

* If any loon nesting sites are identified, they will be protected by a zone 660 feet in radius around the nest site during the nesting season from April 15 to August 15.

Wildlife (See page 49)

* Designate major riparian zones along Moosehead Lake frontage of the Days Academy property; and the entire shorelines of Kineo, Farm Island, and Sugar Island.

* Designate minor riparian zones around minor water bodies.

* Determine if it is feasible to manage the existing deer yards on Kineo and Farm Island and, if so, implement a long-term management plan.

* Designate open fields on Deer Head Farm as a Wildlife Management Area, and manage them to maintain their values for wildlife. Provide signs explaining the designation, and manage roads to prevent general public vehicle use of the area while maintaining access to the in-holding.

Remote Recreation (See page 54)

* Designate six areas on the properties as Remote Recreation, including the entire shoreline of the Days Academy property (except Kelly Wharf campsite), the conservation easement lands (except Cowan Cove campsite), the hiking trails up *Kineo and Little Kineo Mountains* (CHECK MAPS), and the shorelines of Sugar Island, Kineo, and Farm Island in their entirety.

* Maintain single-party campsites in Big Duck Cove, Cowan Cove, and on Sugar and Farm Islands.

* Add a few water-access campsites on Sugar and Farm Islands.

* Remove dilapidated camp buildings near the existing campsite on the south end of Farm Island.

* *Maintain the trails on the state-owned Kineo property and where necessary improve or re-route them to avoid steep areas, improve safety and reduce erosion. Brush over old trails that access peregrine areas.*

~~* Discourage continued use of the Indian Trail, which is steep and difficult to traverse, by placing appropriate signage or by other means. (Including this recommendation depends on the results of additional field work to be conducted during the summer of 1996.)~~

* *Provide adequate signage on all Kineo trails to guide hikers onto appropriate routes.*

* *Work with private campowner to resolve use conflicts near the forewarden's camp.*

* *Work with the private landowner on Kineo peninsula to locate the right-of-way for public access from Kineo Cove to the State property and to explore improvements to and public use of the Kineo Docks.*

General Recreation (See page 56)

* Designate as General Recreation areas vehicle accessible campsites at Cowan Cove and Kelly Wharf, and the Little Kineo Mountain trailhead.

* Place signs to indicate that Deer Head Farm is off limits to vehicle use and camping.

* Remove the dilapidated cribwork at Cowan Cove and slope and stabilize the shoreline.

* Retain the gravel boat launch at Cowan Cove and conduct routine maintenance to ensure that it remains in serviceable condition.

* At the Kelly Wharf campsite, require vehicles to park on the landward side of the road to provide more open space on the site and to reduce their visibility as seen from the water.

* Construct small trailhead parking area for Little Kineo Mountain hiking trail.

Visual Consideration (See page 57)

* Apply Class I Visual Consideration zones to all Remote Recreation areas on the properties.

* Apply Class I Visual Consideration zones to both sides of all public access and management roads, portions of Little Kineo and Shaw Mountains, and to four interior areas on Sugar Island (as well as the shoreline).

* Apply Class II Visual Consideration zones to areas east and west of Little Kineo Mountain and south of Shaw Mountain.

Timber (See page 59)

* No timber harvesting will occur in Special Protection areas.

* When preparing areas for timber sales the Bureau will delineate Special Protection areas on the ground if it is likely that adjacent management activities could impact sensitive resources.

* Manage Days Academy to produce a variety of timber products, and over time strive to increase flow of spruce, fir, pine, and hemlock from the property.

* Manage the timber resource on Sugar Island to produce a sustained yield of forest products.

* If feasible, conduct timber harvesting on Kineo and Farm Island to improve their long-term winter shelter value for deer.

* Delineate boundaries of Special Protection areas at the time an adjacent timber area is being prepared for a timber sale, if there is a likelihood that harvesting could impact sensitive resources.

Administrative Concerns:

Public Access (See page 62)

* Improve existing public access and management roads, during the 10-year planning period, to meet the Bureau's standards for this class of road, and zone both sides Visual Class I.

* **Fire Control (See page 63)**

* Coordinate fire control efforts with the Maine Forest Service to ensure that department staff and equipment can respond quickly to fires.

APPENDIX I

MAPS OF DAYS ACADEMY, SUGAR ISLAND, KINEO, AND FARM ISLAND

APPENDIX II

GLOSSARY

1. Allowable Cut: The number of acres or volume which can be harvested annually, for long-term, sustained yield timber production.
2. Backcountry: Areas which are allocated for recreation as the dominant use because of their special combination of features such as superior scenic quality, remoteness, wild and pristine character, and capacity to impart a sense of solitude, among other values. These areas are typically large in size. Management is characterized by no public vehicular access, dispersed use, minimal recreational facilities, harvesting (where permitted) by uneven-aged methods only designed to retain the natural character of the area and minimize conflicts with recreation use.
3. Crown (or Canopy) Closure: Measure of the completeness of space reduction between the tops (foliage and branches) of adjacent trees.
4. Cutting Cycle: The interval between harvest operations in uneven-aged management.
5. Den Tree: Any live cull tree (preferably hardwood) at least 18" in diameter with existing natural cavities created by (a) heart rot or broken branches, (b) wounds, (fire, lightning or mechanical damage), (c) excavation by wildlife (woodpeckers, etc.). Den trees, being alive, are more persistent than snags.
6. Endangered Species: A Maine endangered species is a plant or animal species in immediate danger of extirpation from Maine due to critically low or declining numbers brought about by habitat loss or degradation, over-exploitation, pollution, disease, or other factors.
7. Edge: The place where plant communities meet or where successional stages or differing vegetative conditions within plant communities come together.
8. Extirpated Species: Any species that was at one time indigenous to Maine but has not been documented as occurring in Maine for the past 50 years.

9. General Recreation Areas: Areas typically accessible by vehicles and allocated for recreation as the dominant use. Management is characterized by moderate intensity use, including: picnic tables, fire rings, pit privies, vehicle parking (on-site or relatively nearby), and a featured attraction(s), typically a body of water. Harvesting will be directed towards aesthetic and safety considerations only.
10. Mast: Nuts and/or fruits which are utilized as food by wildlife. Apples are an example of soft mast, while beech nuts are a characteristic hard mast.
11. Natural Community: An assemblage of interacting plants and animals and their common environment, recurring across the landscape, in which the effects of recent human intervention are minimal.
12. Old-Growth: A stand where most trees in the main crown layer are beyond the age of biological maturity.
13. Phase I Archaeological Survey: Involves initial search for and location of all potentially significant archaeological sites within a specified area, or the gathering of enough data for statistical assurance that no such sites exist. Work includes search of existing archaeological data for the area, communication with local collectors and review of their artifact collections, and where appropriate additional field research including a walk-over and/or subsurface testing with a suitable sampling strategy.
14. Phase II Archaeological Survey: Involves an intensive-level survey of a site including testing to determine its size and contents, developing enough data to decide whether or not the site is eligible for the National Register of Historic Places. Phase II work focuses on specific sites.
15. Primitive Snowmobile Trail: *An informal trail that is maintained by repeated use by local snowmobile owners rather than by scheduled club or town grooming.*
16. Regeneration: Both the process of establishing new growth and the new growth itself--occurring naturally through seeding or sprouting--and artificially by planting seeds or most commonly seedlings.

17. Regulated Forest Acreage: That portion of the commercial forest land base on which the annual allowable harvest is calculated.
18. Release Cutting: Any cutting operation designed to remove competing vegetation from or establish proper spacing intervals among desired trees.
19. Remote Recreation Areas: Semi-remote areas containing significant natural resource features and allocated for primitive recreation as the dominant use. These areas vary in size. Management is characterized by no public vehicular access, dispersed use, and rustic recreational facilities. Integrating secondary uses is less restrictive than doing so in a Backcountry.
20. Riparian Area: Land adjacent to rivers, streams, lakes, ponds, and all types of wetlands where there is a transition from aquatic to terrestrial plant and animal communities.
21. Rotation Age: The age at which stands of timber are harvested for particular economic or silvicultural objectives.
22. Selection Harvest: Related to uneven-aged management, the cutting of individual or small groups of trees; generally limited in area to patches of one acre or less.
23. Silviculture: That branch of forestry which deals with the application of forest management principles to achieve specific objectives with respect to the production of forest products and services. "The theory and practice of controlling forest establishment, composition and growth": D.A. Smith, p. 1.
24. Site Index: An index measuring site productivity based on the height to which a tree will grow at age 50 years.
25. Site Quality: That combination of environmental factors and species requirements which serve to measure how well a particular tree species will become established and grow on a given area of the forest. Often specifically indexed to tree height as attained at age 50.

26. Snag: Any dead or dying tree at least 4" diameter breast height and 6 feet high. Snags are important to many species of plants, invertebrates, birds and mammals that use them for feeding, nesting and shelter.
27. Special Concern Species: Any species of fish or wildlife that does not meet the criteria as Endangered or Threatened Species or an Endangered or Extirpated Species due to restricted distribution, or low or declining numbers, specialized habitat needs or limits, or other factors, or is a species suspected to be Endangered or Threatened or likely to become so but for which insufficient data are available.
28. Stand: A group of trees, the characteristics of which are sufficiently alike to allow uniform classification.
29. Stocking: The number of trees in a given area as compared to the number desired for a given system of management.
30. Sustained Yield: The amount of timber that a forest can produce continuously within a given system of management.
31. Threatened Species: A plant or animal species not as critically jeopardized by extirpation as an endangered species, but will probably become endangered if current population levels experience further declines.
32. Uneven Aged Management: Forest manipulation which strives to create stands where trees fall into at least three different age classes and are characterized by multiple layer canopies and great variation in size of trees.
33. Unregulated Forest Acreage: Commercial forest which, although it may be harvested on occasion, is not expected to produce a regular flow of forest products.
34. Wildlife: Any species of the animal kingdom, including mammals and birds except fish, which is wild by nature, whether or not bred or reared in captivity.

APPENDIX III

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APPENDIX IV

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