Department of Environmental Conservation

Division of Lands and Forests

Pigeon Lake Wilderness Area

Unit Management Plan

October 1992

New York State Department of Environmental Conservation
MARIO M. CUOMO, *Governor* THOMAS C. JORLING, *Commissioner*

PIGEON LAKE WILDERNESS AREA

Unit Management Plan

October 1992

MEMORANDUM FROM
THOMAS C. JORLING, *Commissioner*

New York State
Department of Environmental Conservation

NOV 23 1992

TO: The Record

FROM: Thomas C. Jorling

SUBJECT: Unit Management Plan
Pigeon Lake Wilderness

DATE:

The Unit Management Plan for the Pigeon Lake Wilderness has been completed. The Plan is consistent with the guidelines and criteria of the Adirondack Park State Land Master Plan, the State Constitution, Environmental Conservation Law, and Department rules, regulations and policies. The Plan includes management objectives for a five-year period and is hereby approved and adopted.

cc: L. Marsh

PIGEON LAKE WILDERNESS AREA

"The Pigeon Lake Wilderness Area, with its numerous sparkling lakes, the absence of roads, the divide between numerous watersheds, is an isolated, little top-of-the-world atmosphere, a haven of great variety that does not offend the senses. There is added a few woodpeckers for noise so the stillness is bearable."

S. E. Coutant

TABLE OF CONTENTS

MAP INSERTS

PURPOSE AND NEED

The Department of Environmental Conservation (DEC) has prepared a unit management plan for the Pigeon Lake Wilderness Area as required by the Adirondack State Land Master Plan, Section 816 of the Adirondack Park Agency Act (Article 27 of the Executive Law).

The purpose of this management plan is to guide the preservation, management, and use of the area over the next five years. The plan shall establish long-term goals and objectives in addition to detailing management needs and strategies. The plan covers the time period from 1992 to 1997. Ordinarily, the plan will be revised on a five year cycle, but may be amended or revised earlier if resource and/or sociological conditions change significantly.

This document is divided into five basic sections. Sections I and II discuss the physical, biological, and social factors existing in the unit and the demand for these resources. Section III provides a summary of important issues at the time the plan was prepared and states past and present management activity along with future goals and objectives. Section IV identifies proposed management activities and standards in addition to guidelines for the unit as a whole. This section also provides measures to mitigate adverse environmental impacts. Section V includes a schedule for implementation that addresses budget needs to carry out the work described in the plan.

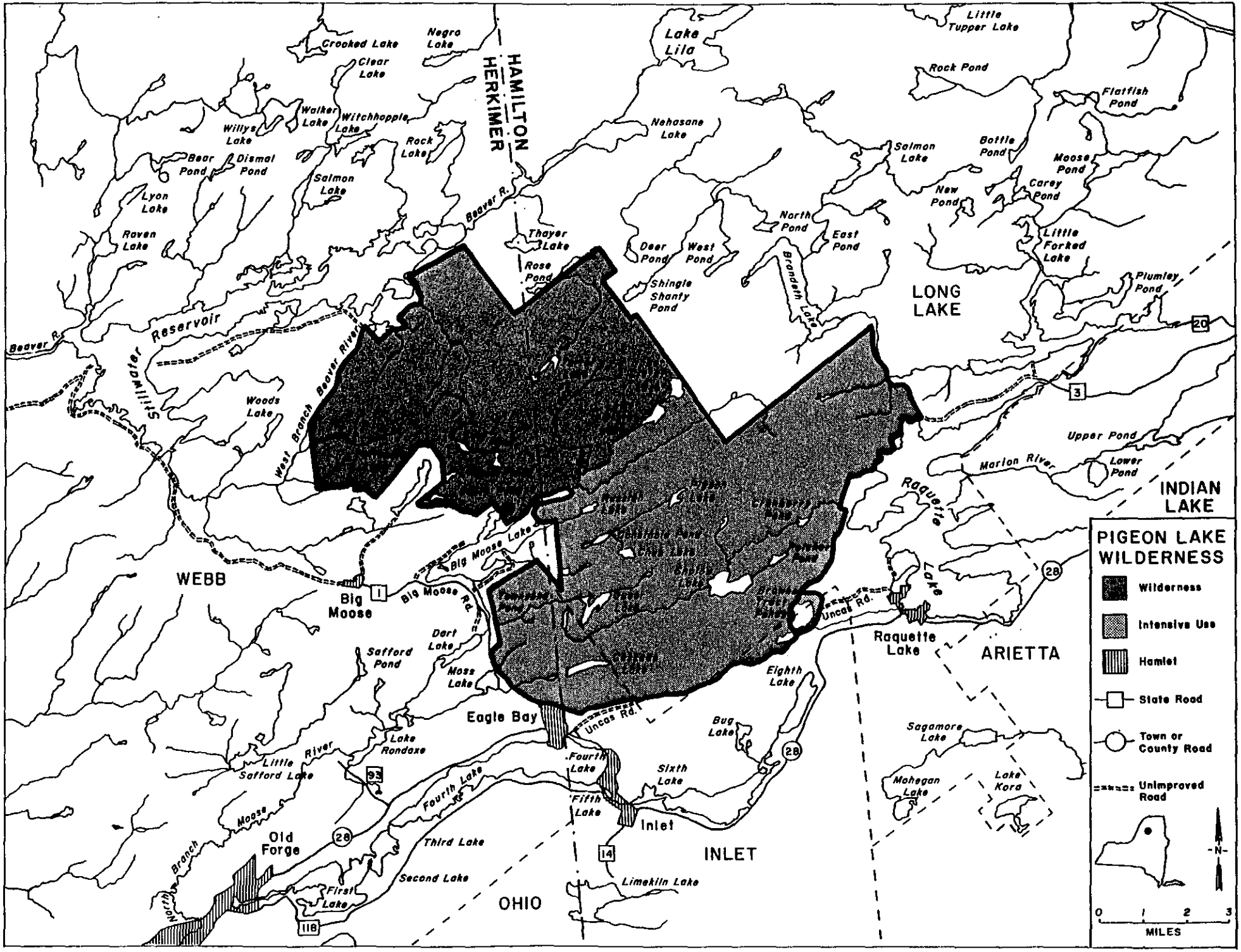
Although much of the information contained within this text was developed by DEC staff, public input via advisory committees, meetings, and general correspondence was important during several stages of the planning process.

Completion of the various management actions outlined within this plan will be dependent upon adequate manpower and funding.

PIGEON LAKE WILDERNESS AREA

STATISTICS

State Land	50,100 Acres
Bodies of Water (71)	1,520 Acres
Elevation, Minimum	1,680 Feet
Elevation, Maximum	2,902 Feet
Foot Trails, Marked (15)	±32 Miles
Cross-Country Ski Trails, Marked (1)	4.6 Miles
Horse Trails, Marked (1)	1.6 Miles
Leantos	5
Trailheads, Developed	3
Dams, Fish Barrier	1 (Remnants)
Docks	1


HAMILTON
HERKIMER
Crooked Lake
Negro Lake
Clear Lake
Lake Lila
Little Tupper Lake
Rock Pond
Flatfish Pond
Walker Lake
Witchhopple Lake
Willys Lake
Rock Lake
Nehasane Lake
Salmon Lake
Bottle Pond
Moose Pond
Bear Pond
Dismal Pond
Salmon Lake
Carey Pond
New Pond
Lyon Lake
Beaver R.
Thayer Lake
North Pond
East Pond
Raven Lake
Deer Pond
West Pond
Rose Pond
Little Forked Lake
Shingle Shanty Pond
Brandreth Lake
LONG LAKE
Plumley Pond
Beaver R.
Stillwater Reservoir
West Branch Beaver River
Woods Lake
Upper Pond
Marion River
Lower Pond
Raquette
INDIAN LAKE
WEBB
Big Moose Lake
Big Moose
Big Moose Rd.
Dart Lake
Safford Pond
Moss Lake
Eagle Bay
Uncas Rd.
Raquette Lake
ARIETTA
Eighth Lake
Bug Lake
Sagamore Lake
Lake Rondaxe
Little Safford Lake
Fourth Lake
Sixth Lake
Mohegan Lake
Lake Kora
Old Forge
Moose River
North Branch
Third Lake
Fifth Lake
Inlet
INLET
Second Lake
First Lake
Limekiln Lake
OHIO
PIGEON LAKE WILDERNESS
Wilderness
Intensive Use
Hamlet
State Road
Town or County Road
Unimproved Road
N
0 1 2 3
MILES

I. INTRODUCTION

A. Area Description

1. General Description

The Pigeon Lake Wilderness Area is located in the west central Adirondacks in the Towns of Inlet and Long Lake, Hamilton County, and Webb, Herkimer County. It lies between four of the larger bodies of water in the Adirondacks--Big Moose Lake, Stillwater Reservoir, Raquette Lake and the Fulton Chain of Lakes--and is approximately 50 miles north of the NYS Thruway and Utica via Routes 28 and 12.

The unit is bounded on the north by Stillwater Reservoir and private lands known as Brandreth Park, on the east by a private road from Brandreth Lake to North Point and Raquette Lake, on the south by private lands along the Uncas Road, and on the west by the Big Moose Road and private lands in addition to the Remsen-Lake Placid rail corridor.

2. Acreage

The Pigeon Lake Wilderness Area contains approximately 50,100 acres. There are no private inholdings within the wilderness boundaries.

3. Access

Road access to the Pigeon Lake Wilderness Area is primarily from secondary roads off of State Route 28. Developed trailheads are located on the Big Moose Road with Brown Tract Ponds Campground providing parking and access from the Uncas Road. Trails originating on private lands in the vicinity of Twitchell Lake and the Judson Road provide additional points of entry. Undeveloped access is also possible where the wilderness boundary abuts public roads or by boat from Stillwater Reservoir, Big Moose and Raquette Lakes.

B. History

The Big Moose locality has historically been used as an outdoor recreation area. The first settlers, recognizing the beauty of the unbroken forests and pristine lakes in the region, soon built hotels on the larger, more accessible lakes and catered to the summer visitor.

At that time, people travelled by train to Utica and then by stage to the Old Forge area--the gateway to the wilderness. The early hotels were located on the Fulton Chain of Lakes but soon extended to the lakes on the perimeter of the present wilderness area. Guests frequently travelled the last few miles to their favorite hotel by boat or foot until wagon roads were cut through the wilderness.

Vacations at these luxurious hotels were spent leisurely enjoying the fresh air, boating and hiking. The hotel owners developed forest trails throughout the region for the pleasure of their guests. Several of these trails were developed in what is now the Pigeon Lake Wilderness Area and are still in use today.

The area also caught the eye of the affluent, and such fiscal giants as J. Pierpont Morgan, H. P. Whitney, R. C. Vanderbilt and William Seward Webb purchased large tracts of land, known as "parks", for private summer resort use. William Seward Webb had a dream of opening up the Adirondack wilderness by constructing a railroad from Mohawk to Malone. His enthusiasm and family finances were soon committed to having the dream become reality. In 1892, after a long and arduous struggle, the Mohawk and Malone Railroad was completed with the final spike driven in a ceremony near Big Moose.

The railroad did much to open up the area. Vacationists now had the fastest, most reliable and comfortable travel available to the many resort areas and tourism boomed. The railroad also provided a means to transport

the logs and lumber from the forests to distant markets. Forest harvesting became an increasingly important industry in the area and portions of the Pigeon Lake Wilderness Area were logged over. There are, however, areas of old growth white pine in the vicinity of Pigeon Lake and a few other locations.

The advent of the automobile and the penetration of highways into the Adirondacks signaled the beginning of the end for this era. By the mid 1950's, the availability of motorized transport in combination with extensive road systems enabled a greater variety of public use and access throughout the Adirondack Park.

Several of the early hotels are still in existence today and can be found near the wilderness boundaries. People continue to come to the area to enjoy a wide range of recreational opportunities in a natural setting. The wilderness has remained relatively unchanged through it all and still offers a sense of wildness and solitude.

II. RESOURCE AND PUBLIC USE INVENTORY OVERVIEW

A. Natural Resources

1. Physical

a. Geology

The Adirondacks are among the oldest mountains known to man. They are a southeasterly extension of the Grenville Province of the Canadian Shield. The rock material in the Grenville series was formed in pre-Cambrian times and has remained relatively stable for some 1,100 million years.

Glaciation has modified the landscape by rounding the ridges and relocating glacial debris. Glacial till and outwash deposited in the lowlands and valleys as the glaciers receded created many of the lakes and ponds in the area.

The parent material or bedrock of the Pigeon Lake Wilderness Area is composed of charnockitic and syenetic gneisses, granite and subordinate metasedimentary rocks, and the soils of the area reflect the composition of these underlying materials. A geologic map showing the general relationship between bedrock characteristics and topography is found in the appendix (Map #7).

The Adirondacks are transected by long northeast-southwest lineaments representing shear zones or major faults. The general drainage pattern and alignment of ridges in the Pigeon Lake Wilderness Area shows this phenomenon very clearly.

b. Soils

Soils in the Pigeon Lake Wilderness developed from sandy glacial till which was derived from granitic rock. Soils are acid, deep, coarse, loamy, and very stony. These soils occupy rolling to hilly

landscapes and are mostly forested. Upland and steep areas contain rock outcrops with a shallow soil layer.

The soils are classified into the following groups: Haplorthods, Fragiorthods, or very stony Fragiaquads. In these soils, iron and humus are translocated to subsoils leaving a light colored horizon above.

The three main soil series are Becket, Berkshire and Potsdam. Berkshire soils have spodic horizons, but are lacking a fragipan. They are formed from mica schists, phyllite and granite till. Becket and Potsdam soils also have the spodic horizon as well as a clearly defined fragipan below this layer. Becket soils are formed from granite and gneiss till whereas Potsdam is composed of silty deposits over granite or sandstone. Other soils associated with all three soil series are Skerry, Hermon, Waumbek, Dixmont, Canaan, Adams, Colton, Naumburg, Starboro, and Peat (Cline and Marshall, 1977).

The dominant soils which have a fragipan or compact substrata can cause problems in camping areas where internal drainage and sanitation are important.

Currently, only general soils maps are available for the Pigeon Lake Wilderness Area (see Appendix Map #6). Site-specific soil surveys of popular recreational areas have not been conducted. For more detailed information on area soils consult the Soils Report for Hamilton County (Adirondack Park Agency, USDA Soil Conservation Service, and Cornell University, 1982) and Soils of New York Landscapes (Cornell University, 1977).

c. Terrain

The topography of the Pigeon Lake Wilderness Area consists primarily of low rounded hills or ridges with steep slopes. The ridges generally run in a northeast direction, particularly in the southern portion of the area.

The greatest differential in elevation is found between the 2,902-foot summit of West Mountain and the pool elevation of Stillwater Reservoir at 1,680 feet. The average differential between lakes and ridge tops in the interior is 550 feet. The ridges top out on the 2,200-foot contour in the northern portion of the area and on the 2,400-foot contour in the southern portion. (See Appendix Map #1)

Detailed information on area topography can be found on the following 7.5x15 minute USGS 1:25,000-scale metric maps: Beaver River, Forked Lake, Eagle Bay, and Raquette Lake.

d. Climate

The Pigeon Lake Wilderness Area is one of the coolest and wettest areas in New York State. The total precipitation in the area averages between 48 and 50 inches per year. Snowfall accounts for approximately 25% of this total, averaging 180 inches annually and covering the ground from mid-November until April. The average minimum temperature for the month of January is 6°F while the average maximum temperature in July is in the 78°-80°F range. Few areas in the state have cooler, wetter statistics.

The Pigeon Lake Wilderness Area, due to its location along the western edge of the Adirondack Region, has a serious problem with "acid rain". The west to east flow of weather patterns provides for moisture evaporated from the Great Lakes to combine with industrial

pollutants to form what is known as acid rain. Cooling of the moisture-laden clouds as they rise over the mountains causes precipitation, bringing the pollutants to earth as acid rain. This phenomenon is discussed further in later sections of this plan.

e. Water

The Pigeon Lake Wilderness Area (PLWA) is drained by two major watersheds -- the Raquette River watershed on the east and the Black River watershed on the west, both of which ultimately flow into the St. Lawrence River. The Black River watershed drains approximately 75% of the area via the Beaver and Moose Rivers. Big Moose Lake and Stillwater Reservoir border the Pigeon Lake Wilderness. Area waters that contribute to the Raquette watershed flow either into Raquette Lake or Forked Lake. Raquette Lake comprises a small portion of the wilderness area's northeast boundary.

The unit contains 71 interior lakes and ponds totalling approximately 1,520 acres in surface area. Shallow Lake is the largest individual waterbody, with a 268-acre surface area. Other notable waters include 142-acre Queer Lake, 101-acre Cascade Lake, 87-acre Lower and 77-acre Upper Sister Lake, 54-acre Constable Pond, 49-acre Upper Brown's Tract Pond, and 37-acre Russian Lake. A portion of Mays Pond (33 acres) is privately owned, but this water is included in the PLWA inventory of lakes.

Section IV, Projected Use and Proposed Management-Fisheries, lists the major ponded waters in the PLWA with a brief narrative statement pertaining to their important features, including past and current management, accessibility, size, water chemistry, and fish species

composition. Table 1 gives additional statistical information about the ponded waters of the area, including watershed, fisheries management classification, depth, and volume. The most recent chemical and biological data are summarized in Table 2.

There are approximately 70 miles of generally small brooks and creeks within the area. These streams comprise approximately 50 acres of surface area. No wild, scenic, or recreational rivers are found within the boundaries of the Pigeon Lake Wilderness Area.

f. Wetlands

Freshwater wetland inventories in the Adirondack Park are being performed by the Adirondack Park Agency. The regulation and mapping of wetlands conform to the procedures established in Article 24 of the Environmental Conservation Law and 6NYCRR Part 664. Freshwater wetlands are identified and mapped by the presence of wetland vegetation and hydric soils

Inventories of the wetlands within the Herkimer and Hamilton County portions of the wilderness area have recently been completed by the Adirondack Park Agency. Information from these new freshwater wetland maps will be included in this plan when it is updated. Specific wetland boundaries within the unit have been located on the following 7.5 minute quadrangle inventory sheets: Big Moose and Beaver River (APA, 1984) and Eagle Bay, Nehasane Lake, Raquette Lake, and Brandreth Lake (APA, 1987).

Many wetlands typically occur along waterways and in association with ponds and lakes. Notable examples include Constable Creek, Andys Creek and several streams not named on the Big Moose 15-minute

USGS quadrangle sheet. Beaver have created or expanded some of these wetlands.

Among the numerous wetland values are erosion and flood control, nutrient cycling, fish and wildlife habitat, in addition to providing open space and areas for public recreation. Wetland vegetation can be quite variable and may include trees and shrubs along with bog, emergent, and aquatic vegetation. The most common plant species that may be encountered in each class of wetland are listed in Appendix 16.

2. Biological

a. Vegetation (See Appendix 15 - Tree Species List)

The predominant forest covertypes found within the Unit include the Northern Hardwood, Northern Hardwood-Spruce-Fir, and the Spruce-Fir types.

The moist to wet swampy areas are generally covered with the Spruce-Fir type. Red spruce and balsam fir are the major component species with black spruce, tamarack, hemlock, white pine, yellow birch, and red maple the most common associated species. Alders generally grow thickly along the stream courses in these areas. The tops of the higher ridges and mountains are also frequently covered with the spruce-fir type as evidenced by the summit of West Mountain.

Hardwood species begin to become a more prominent part of the spruce-fir association as soil drainage improves. The Northern Hardwood-Spruce-Fir type consists primarily of sugar maple, yellow birch, American beech, red spruce and balsam fir. Associated species include hemlock, white pine, tamarack and red maple. The softwood component continues to decline as drainage improves with the Northern Hardwood type found on the better drained, more fertile

upland sites. The major species of this type are sugar maple, American beech and yellow birch, found in association with hemlock, white pine, red spruce and red maple.

The associated species in each type are found either as scattered single trees or in small, pure stands. Windstorms such as the 1950 "blowdown" removed some of the overstory of large pine, spruce and hemlock in areas of the unit where logging did not take place, but there are still some impressive specimens scattered throughout the area, particularly of white pine.

The entire wilderness area lies in what has been classified as the Central Spruce-Fir region of the Adirondacks. The aggressiveness of red spruce and balsam fir and their regenerative abilities, particularly balsam fir, are noteworthy and should be considered in any management program in the area.

The beech bark disease has had a severe impact on the beech component found in the various forest types. Many of the larger beech are dead or dying as a result of this imported insect-fungus complex. The smaller size classes do not appear to be as adversely affected and, as a result, will provide for the perpetuation of the species as a component of the forest.

The understory vegetation consists of shade-tolerant hardwood and softwood species such as sugar maple, American beech, red spruce, balsam fir and hemlock. A partial listing of shrubs would include viburnums, dogwood, alders, honeysuckle and various rhododendrons. Common ground plants include trillium, adder's tongue, spring beauty, sarsaparilla, wintergreen, partridge berry, Indian cucumber root,

Solomon's seal, ground cedar and other club mosses, and various ferns.

At present, no detailed comprehensive inventory or vegetative mapping has been conducted by DEC in the Pigeon Lake Wilderness Area. This information will be developed as needed and as personnel become available. A recent review of the Natural Heritage Program files (Burrell Buffington, 1991) did not reveal the presence of any threatened or endangered plant species within the unit. However, three rare plant species -- Pickering's reedgrass (Calamagrostic pickeringii), pondweed (Potamogeton confervoides), and bog aster (Aster nemoralis) -- are believed to occur within the wilderness area. A historical record identified rush aster (Aster borealis, last observed in 1914) within the unit.

Ferd's Bog has been identified as a bog exemplary site (2020 Vision, 1988). The preliminary NYS Natural Heritage Program palustrine communities in this location include a poor fen and black spruce-tamarack swamp. The Ferd's Bog site exhibits the typical sphagnum, bog rosemary, bog laurel, leatherleaf, and Labrador tea bog vegetation with an open water pond in the center. Additional plants, including sundew, pitcher plant, white-fringed orchid, rose pogonia, buck bean, and grass pink, have been reported by Gary Lee, a forest ranger familiar with the area.

b. Wildlife

Field inventories of wildlife species have not focused specifically on the Pigeon Lake Wilderness Area. Various publications and field observations, along with the Natural Heritage Program's vertebrate abstract base, were used to develop species lists for the area.

Information on wildlife habitat preference, seasonal occurrence, and unit management area status can be found in the Appendix. This unit is located within the central Adirondack Mountain ecological zone of New York State.

(1) Birds

Appendix 5 lists the species of birds that may be present in the unit during one or more seasons of the year. In addition to direct observation, several other sources of information were used to develop a list of birds present. Sources include Birdlife of the Adirondack Park by Bruce Beehler (1978), Birds of New York State by John Bull (1974), Webb et al (1977), The Atlas of Breeding Birds in New York State, and knowledgeable people.

Birds associated with marshes, ponds, lakes, and streams are numerous including the common loon, pied billed grebe, great blue heron, green-backed heron, American bittern, and a variety of waterfowl. The most common ducks include the mallard, American black duck, wood duck, hooded merganser, and common merganser.

Birds of prey that may be seen include the barred owl, great horned owl, Eastern screech-owl, northern goshawk, red-tailed hawk, sharp-shinned hawk, and broad-winged hawk.

A variety of song birds such as woodpeckers, flycatchers, wrens, thrushes, vireos, warblers, blackbirds, finches, grosbeaks and sparrows can be found among the various habitats present in the area. Appendix 6 lists comments on selected bird species. Cooperators working with the NYS Breeding Bird Atlas have identified 85 species as confirmed breeders within the Atlas blocks that

comprise the wilderness area. These are listed in Appendix 12, along with 14 possible and 12 probable breeding bird species categories.

(2) Mammals

Appendix 7 lists the mammals that may be present in the Pigeon Lake Wilderness Area.

Larger mammals known to inhabit the area include white-tailed deer, black bear, beaver, river otter, fisher, coyote, bobcat, raccoon, red fox, gray fox, pine marten, muskrat, striped skunk, porcupine, and snowshoe hare. A variety of smaller mammals can be found in the unit, including a number of species of shrews, bats, moles and mice, along with the shorttail and longtail weasel, mink, eastern chipmunk, woodchuck, and red squirrel.

Most of the species are distributed relatively evenly throughout the unit with populations of weasel, mink, muskrat, otter, and beaver concentrated near water. Snowshoe hare and red squirrel are mostly confined to stands of spruce and fir.

Important big game species within the wilderness area include the white-tailed deer and black bear. The deer population size can be directly correlated to habitat conditions. From early spring (April) to late fall (November), deer are distributed generally throughout this area on their "summer range" moving to traditional wintering areas after significant snow depth. Black bears are essentially solitary animals and tend to be dispersed throughout the unit. Occasionally, individuals congregate around local landfills or popular camping areas.

Additional information on selected species can be found in Appendix 8. Harvest records are collected for deer, bear, coyote, bobcat, fisher, marten, otter, and beaver by town, county, and wildlife management unit. See Appendix 18.

(3) Amphibians and Reptiles

According to the observations of DEC Wildlife staff, and information obtained from A Field Guide to Reptiles and Amphibians by Robert Conant (1958), as many as 15 species of amphibians and 11 species of reptiles can occur among the various habitats found in the wilderness area (Appendix 9). Specific comments on selected species can be found in Appendix 10.

(4) Endangered, Threatened, Species of Special Concern and Other Unique Species of Wildlife

Except for observations of bald and golden eagles during migration, no endangered species are known to reside in the Pigeon Lake Wilderness Area.

Threatened species of wildlife that may be residents of the area include the osprey, red-shouldered hawk and spruce grouse. The Breeding Bird Atlas lists both the osprey and red-shouldered hawk as "confirmed" in the Bird Atlas blocks that encompass the Pigeon Lake Wilderness boundaries. Osprey are known to nest in the area with reported nest sites concentrated in the southern portion of the unit. Osprey that nest adjacent to the wilderness area may readily include portions of the wilderness within their range of feeding activity.

According to Birds of New York State, by John Bull (1974), spruce grouse have inhabited an area near Terror Lake. William

Marleau, a retired forest ranger with the Department of Environmental Conservation, reported seeing spruce grouse there in the mid-1970's. Their presence at this location has not been confirmed in recent years. In addition, observations of spruce grouse have been recently reported in the Ferd's Bog and Shallow Lake area.

Species of Special Concern that are known to inhabit the wilderness area include the common loon and northern raven. Nesting pairs of common loons have been documented on the following wilderness lakes during the 1978 Loon Breeding Survey: Queer Lake, Upper and Lower Sister Lakes, and Cascade Lake. In 1980, separate breeding pairs were observed on Queer and Cascade Lakes, while Upper Sister Lake was not checked. Additional nesting activity was reported on Shallow Lake while Stillwater Reservoir, located adjacent to the unit is reported to have the largest nesting population in the Adirondacks. The loons may gradually disappear from the area if the trend in declining pH in interior lakes continues. See Section IV-H-4.

The northern raven, which has not been common in the Adirondacks since the last century, is beginning to make a comeback. This species is a confirmed breeder within the unit.

There are a number of wildlife species that may be considered unique to either the forested mountains of New York and New England, the boreal spruce-fir disjunct from Canada, or at their northern or southern limits in range. A few species may be abundant elsewhere and yet find limited habitat in the Adirondacks. Many of these species are generally considered obligative to

extensive forest with low human development. The following is a list of such unique species believed to be found in the wilderness area.

Birds	Reason for Unique Status
Great Blue Heron	Limited habitat in Adirondacks, abundant elsewhere, observed on Big Moose Lake "Inlet"
Common Goldeneye	Southern limit of range
Bald Eagle	Historical range, endangered
Northern Harrier	Limited habitat
Spruce Grouse	Southern limit of boreal range
Three-toed Woodpecker	Southern limit of boreal range
Black-backed Woodpecker	Southern Limit of boreal range
Gray Jay	Southern Limit of boreal range
Northern Raven	Range limited to mountain areas
Boreal Chickadee	Southern limit of boreal range
Gray-cheeked Thrush	Nests at high elevations in stunted conifers
Ruby-crowned Kinglet	Southern limit of nesting range
Tennessee Warbler	Southern limit for nesting
Bay-breasted Warbler	Southern limit of nesting range
Mourning Warbler	Southern limit of nesting range
Rusty Blackbird	Southern limit of nesting range
Evening Grosbeak	Southern limit of nesting range
Yellow-bellied Flycatcher	Southern limit of nesting range
Olive-sided Flycatcher	Southern limit of nesting range
Lincoln's Sparrow	Southern limit of nesting range
Mammals	
Black Bear	Found in forested areas
Bobcat	Most common in forested areas
Fisher	Southern limit of boreal range
Marten	Southern limit of boreal range

(5) Significant Habitats

The Significant Habitat Unit and the NY Natural Heritage Program files were reviewed (Burrell Buffington, 1991) for biological information on the Pigeon Lake Wilderness Area. The DEC Bureau of Wildlife identified these sensitive areas within the unit (See Appendix Map 4):

(a) Deer Wintering Areas

Deer populations fluctuate annually with winter starvation losses representing the most significant mortality factor. When snow depths accumulate to 20 inches or more, deer congregate in specific wintering areas. These sites are used typically every winter and are usually areas of spruce-fir forest. The carrying capacity of deer wintering areas essentially controls the carrying capacity of their entire annual range.

Eleven deer wintering areas are wholly or partially contained within the unit, mostly identified by the watersheds with which they are associated (see Map 4):

Big Moose Lake (three locations)
Shallow Lake
Middle Raquette Lake
Thayer Lake
Upper and Lower Sister Lakes
Terror Lake
Rose Pond
Beaver River
Stillwater Reservoir (southeast end)

(b) Waterfowl Nesting Areas

Shoreline characteristics of certain waterbodies can provide suitable nesting areas for loons and other waterfowl:

Upper and Lower Sister Lakes
Queer Lake
Cascade Lake

(c) Raptor Nesting Areas

While osprey nesting activity has occurred both within the unit and adjacent to the wilderness boundaries, individual sites may or may not be active. Past nesting activity has occurred on:

Beaver Brook
Shallow Lake
Brandreth Lake Outlet
Razorback Pond

(d) Bird Roosting Areas (Ferd's Bog)

Ferd's Bog is located one-half mile north of the Uncas Road in the southern portion of the Pigeon Lake Wilderness Area. This bog is one of the prime Adirondack birding areas reflecting species of birds found only in the limited boreal and bog habitat of the Adirondacks. Species of particular importance include the black-backed woodpecker, the three-toed woodpecker, the boreal chickadee, yellow-bellied flycatcher, spruce grouse, gray jay, and rusty blackbird.

Sixty-nine species of birds were recorded here by Ferdinand LaFrance during the summers of 1970 and 1971. Even today, the presence of these species continues to attract bird watchers from throughout the northeast to what has become known as "Ferd's Bog".

(6) Extirpated Species

The elk, moose, timber wolf, cougar, Canada lynx, wolverine, bald eagle, and peregrine falcon may have once inhabited the Pigeon Lake Wilderness Area. All have disappeared from the Adirondacks -- the mammals, mostly as a result of the unregulated harvest and vast habitat destruction of the nineteenth century, and the birds, more recently as victims of the widespread use of DDT.

Expanding moose populations since 1980 in Southern Ontario,

Southern Quebec, Maine, New Hampsire, Vermont and Massachusetts have resulted in a movement of moose into New York State. An estimated 25-30 moose are currently (1992) thought to inhabit northern New York. Confirmed sightings of transient moose within and adjacent to the Pigeon Lake Wilderness Area have occurred over the past several years.

Canada lynx have been reintroduced into the Adirondack Park by the SUNY College of Environmental Science and Forestry as a part of their Adirondack Wildlife Program. Several releases, totalling 83 animals, have been made between 1989 and 1991. Wide dispersal from the release area has been observed and mortality has been high, especially mortality caused by vehicle collision. Lynx tracks were observed in the Pigeon Lake Wilderness Area in March 1990 by Forest Ranger Doug Riedman (personal communication).

c. Fisheries

The aquatic communities of the Adirondacks are a result of geological and human influences. Prior to human influences, relatively simple fish communities were common, particularly in headwater areas such as the PLWA. Human-caused changes in habitat and introduction of fishes have altered those natural communities. Nonnative fishes are widespread and many native species now are more widely distributed than historically. Other natives, notably brook trout and round whitefish, have declined.

Geological History

The Fishes of the Adirondack Park, a DEC publication (August 1980) by Dr. Carl George, of Union College, provides a summary of geologi-

cal events which influenced the colonization of the Adirondack ecological zone by fishes. A limited number of cold tolerant, vagile, lacustrine species closely followed the retreat of the glacier. Such species presumably had access to most Adirondack waters. About 12,000 BP (before present), glacial retreat exposed much of the St. Lawrence Valley and the Laurentian Corridor opened for recolonization of the PLWA portion of the Adirondacks via the Oswegatchie, Black, and Raquette Rivers. Barriers and high gradient streams kept some lowland boreal species, such as northern pike, lake whitefish and burbot from colonizing the area. In general, waters low in the watersheds would have the most diverse communities. The number of species present would have decreased progressing towards headwater, higher elevation sections. Chance and variability in habitat would have complicated the trends. Consequently, a diversity of fish communities, from no fish to monocultures to numerous species, occurred in various waters.

Human Influences

Approximately 300 years ago the influence of human cultures from the Old World initiated a period of rapid manipulation of the natural environment. Commercial trapping, hunting, fishing and lumbering precipitated substantial impacts to natural ecosystems. Slightly more than 150 years ago, canal construction opened new migration routes for fishes into peripheral Adirondack areas. Railroads and roads were developed to support the tanning and lumbering industries, and in the late 1800's tourism rapidly expanded (George, 1980).

This exploitation of pristine fisheries combined with anthropogenic environmental degradation (acid rain) resulted in the

decline of fish populations and stimulated early management efforts consisting primarily of stocking.

A variety of nonnative species were distributed into the Adirondack uplands via stocking efforts described by George (1980) as "nearly maniacal". He notes that many species were "...almost endlessly dumped upon the Adirondack upland." Nonnative species were introduced and the ranges of native species, which previously had limited distributions, were extended. The result has been a homogenization of fish communities. Certain native species, notably brook trout and round whitefish, have declined due to the introduction of other fishes. Other natives, brown bullheads and creek chubs, for example, are presently much more abundant than historically, having been spread to many waters where previously absent. Consequently, fish populations in the majority of waters in today's Adirondack wilderness areas have been substantially altered by the activities of mankind. Indeed, of 1,123 Adirondack ecological zone waters surveyed by the ALSC, 65% contained nonnative species.

Detailed documentation of the historic fish communities is not available. Extensive fishery survey data was first collected in the 1930's, decades after the massive stockings and introductions of the late 1800's. Reviewing work by Mather (1884) and others from the late 1800's George (1980) has summarized what is known. Table 3 presents information on species known to be native, native-but-widely introduced (NBWI), and nonnative. It should be noted that the native classification does not mean those species were found in every water nor even in a majority waters. For example, of 1,123 waters

surveyed by the Adirondack Lakes Survey Corporation in the 1980's, white suckers and northern redbelly dace were found respectively in 51 and 19 percent of the lakes. The other species listed in Table 3 as native are less widely distributed. Such distributions, after a century of introductions, demonstrate that "native" does not necessarily imply a historically ubiquitous distribution. Indeed, barriers, high stream gradients, low stream fertilities, and rigorous climatic conditions following retreat of the glacier resulted in low species diversity for fishes in most Adirondack waters.

Brook trout, however, were particularly successful at colonizing and thrived in the relative absence of competing and predacious fishes. George (1980) states: "Under primeval conditions, the brook trout was nearly ubiquitous in the Adirondacks. Its agility, great range in size and facility in rapidly flowing water allowed it to spread widely, perhaps even concurrently with the demise of the glaciers, thus explaining its presence in unstocked waters above currently impassible waterfalls."

The headwater nature of the PLWA and the high gradients of its streams would have caused low fish diversities in the PLWA relative to much of the Adirondacks. Furthermore, the Adirondacks in general had low fish diversities relative to surrounding lowland regions. Consequently, the PLWA historically supported particularly low diversities on a region-wide basis. Brook trout have the extreme agility necessary to have naturally colonized PLWA waters and, therefore, were probably particularly abundant in the unit. Also,

historic brook trout monocultures were most likely to have occurred in such headwater areas.

Impacts of Fish Introductions

The decline in brook trout associated with the introduction of other fishes is a result of both predation and competition for food. Brook trout feed primarily on invertebrates. Many other fishes, including white sucker, longnose sucker, redbreast sunfish, pumpkinseed, brown bullhead, yellow perch, and the cyprinids (minnows, shiners, and dace) also feed primarily on invertebrates (Scott and Crossman 1973). In low fertility waters such as Adirondack ponds, competition for such forage can be intense.

In addition to competing with brook trout for food, many fishes prey directly on brook trout. Northern pike, largemouth bass, smallmouth bass, and rock bass are highly piscivorous. Species which may feed on eggs and/or fry include yellow perch, brown bullhead, pumpkinseed, creek chub, common shiner, white sucker and longnose sucker (Scott and Crossman 1973). The relative importance of competition versus predation in the decline of brook trout is not known for individual waters, but the result is the same regardless of the mechanism.

Competition and predation by introduced species have greatly reduced the abundance of brook trout sustained by natural reproduction. Only about 40 (10%) of the traditional brook trout ponds in public ownership in the Adirondack Park now support viable, self-sustaining brook trout populations and they are gradually being lost as other fishes are introduced. Only Queer Lake presently sustains a viable brook trout population by natural reproduction in

the PLWA. The potential for successful natural reproduction is greatly enhanced when interspecific competion and predation are greatly reduced or eliminated.

Human introductions of nonnative fishes and native fishes which had limited distributions have nearly eliminated natural brook trout monocultures in the Adirondacks. Historic brook trout monocultures are well known in the Adirondack Park and the survival of even a few such unique communities through the massive environmental disturbances and species introductions of the 19th and 20th centuries is quite remarkable.

Acid Precipitation

Fish species native to the Pigeon Lake Wilderness Area are those typically associated with the Adirondack upland; however, area waters have been severely impacted by acid precipitation. Many lakes and ponds that formerly contained fish populations are now devoid of fish life and diversity of native species has been reduced.

Many brook trout fisheries in the Adirondacks have succumbed to the insidious phenomenon of acid precipitation. It is believed from DEC fishery survey records that the effects of acid rain began impacting fish populations three to four decades ago. This problem is discussed in detail later in this plan (Section IV.H.4.a).

At least six PLWA waters known to have supported "fishable" populations of native brook trout prior to the 1950's have acidified to a degree where this is no longer possible. These include Pigeon Lake, East Pond, Lilypad Pond, Chub Lake, Constable Pond, and Oswego Pond.

Acidification of PLWA waters has reduced diversity of native fishes throughout the unit. Pelchar Pond has apparently experienced a sharp reduction in fish species diversity; five of six native species documented in historical surveys have been extirpated due to acidification. Queer Lake has apparently lost five species also. Two of these were native species, lake trout and lake chub, found historically within the PLWA only in Queer Lake. Other area waters that now contain no fish life may once have harbored fish populations, but existing records are inadequate to ascertain this.

Brook Trout Distribution

Only three lakes and ponds in the PLWA now support "fishable" brook trout populations (Table 4). These are Shallow Lake, Queer Lake, and Cascade Lake. Queer Lake has the only NSA (natural spawning adequate) brook trout population in the unit.

Recent survey data indicates that the brook trout population has been reduced due to interspecific competition from other fish species in three PLWA ponds. Upper and Lower Sister Lakes had NSA brook trout populations when first surveyed in 1950, but since then the nonnative yellow perch became established and has proliferated greatly. No brook trout were caught in Lower Sister Lake in a 1984 survey, although 178 yellow perch were netted. Only one brookie was netted in Upper Sister Lake (along with 330 yellow perch). Brook trout were abundant in a 1933 survey of Cranberry Pond, but only two specimens were caught in 1984 by the Adirondack Lakes Survey Corporation (ALSC) while nonnative golden shiner dominated the catch (golden shiners were not caught in 1933, 1955 or 1979 surveys). Windfall Pond sustains a small population of wild brook trout

identified as a heritage strain by Keller (1979) which may now be threatened by an increased abundance of white suckers, northern redbelly dace, blacknose dace and creek chub (NBWI). Only one brook trout was caught in a 1984 ALSC netting of Windfall Pond. A 1990 survey of Windfall Pond by DEC captured six brook trout and eight white suckers. Only experimental gillnets were used in the 1990 survey, thus cyprinid populations were not effectively sampled.

Fish Distribution (other than brook trout)

Lake trout are the only other native, coldwater gamefish (those species which are regulated by seasons, size or bag limits) in the PLWA. Queer Lake is the only PLWA water which may contain this species. It is not clear whether lakers are indigenous to Queer Lake because the species was stocked in 1926, seven years before the first biological survey of the lake in 1933. A naturally reproducing population of lakers survived in Queer Lake for many years, but were not captured in the 1986 ALSC survey. Assistant Forest Ranger Mark Clark reported hearing of occasional lake trout being caught, but it appears the population is much reduced from historical levels.

Warmwater fish are found in two PLWA lakes (Table 2). Largemouth bass occur in Upper Brown Tract Pond and smallmouth bass can be caught in Shallow Lake. Both species are not native to the Adirondacks.

Native panfish (those species the taking of which is not regulated by season, size or bag limits, but which are generally valued by anglers as food) include the NBWI species of brown bullhead and the pumpkinseed (common sunfish). Brown bullhead are found in at least

nine PLWA lakes, while pumpkinseed are found in five lakes (Table 4). The nonnative panfish species, yellow perch, which is known to be a serious competitor with brook trout, is found in Cascade Lake, Upper and Lower Sister Lakes, Upper Brown Tract Pond and Russian Lake.

Another nonnative species, the golden shiner, which is a serious competitor with brook trout, is found in five PLWA waters (Cranberry Pond, Queer Lake, Shallow Lake, Upper Sister Lake and Upper Brown's Tract Pond). This species is commonly used as bait by fishermen and has spread widely across the Adirondacks via careless practices or the illegal use of bait.

Other fish species which are native to area waters include the white sucker, common shiner, creek chub, northern redbelly dace and blacknose dace. Acidification may be impacting the distribution of some of the native minnow species in the PLWA.

Historically, lake chub were found in Queer Lake. Lake chub are a leaden-silvery minnow of 4-9 inches in length which may be declining in the Adirondacks (George, 1980). They are commonly associated with brook trout and lake trout in Canada and were noted in historical Adirondack accounts. The ALSC captured lake chubs in only 19 waters scattered among five water watersheds. Lake chub appear to be tolerant of acidic conditions (George, 1980), thus it appears that competition with nonnative species may be contributing to their general decline in the Adirondacks and Queer Lake, in particular.

The endangered native species, round whitefish, are a high management priority in the High Peaks Wilderness. No records of this species occurring in PLWA lakes can be found, however, so introduc-

tion of round whitefish to the unit would not be compatible with its historic character.

Nonnative "minnow" species found currently or historically in the PLWA are the fathead minnow, banded killifish and central mudminnow.

Streams

Data, both historical and current, is generally lacking for the brooks and creeks within the Pigeon Lake Wilderness. It is believed that nearly all area streams contained populations of small, wild brook trout and native minnows at some time in the past. It is very likely that these fish populations have been seriously impacted by acidification, though there may be streams or sections of streams, that derive their flows from upwellings of spring water that are still capable of sustaining fish life.

3. Visual

The rolling topography and existence of tree cover on the tops of ridges and mountains, both within the wilderness and the general area surrounding it, does not lend itself to spectacular views.

The greatest differential in elevation is 1,222 feet, found between the pool elevation of Stillwater Reservoir and West Mountain. The average differential in elevation is approximately 550 feet, hardly sufficient for majestic views of the area.

The visual impact of this wilderness area tends to be centered around the many sparkling lakes nestled between the ridges and surrounded by unbroken forests. The vegetative cover is frequently dense and practically impenetrable along the lakeshores; but, when a vantage point is obtained, the scenic view is often a just reward for the effort expended.

4. Unique and/or Historical Areas

a. Unique Natural Areas

(1) Waterfalls - Cascade Falls on the inlet to Cascade Lake.

(2) Wetland - North Inlet-Big Moose Lake.

(3) Cliffs - Located above Cascade Lake outlet.

(4) Sandy Shoreline - Portions of Cascade Lake, Upper Brown Tract Pond.

b. Historical Areas

(1) Cascade Lake - Location of an early 20th century girls camp on the north shore of this waterbody. Known for its equestrian exhibitions, this camp consisted of a complex of buildings and roads around the lake.

(2) North Bay (Big Moose Lake) - Described by Verplank Colvin as "a bay of singular shape, almost separated from the main body of water, and extremely picturesque in its own islands, bays and points". Pine Point within Pigeon Lake wilderness is a popular picnic site on North Bay.

(3) Terror Lake - Named by George and Charles Fenton in 1844. Numerous remote hunting camps were located in the vicinity of this lake in the early 1900's.

(4) Queer Lake - Named for its odd shape.

(5) Russian Lake and Constable Pond - named after local sportsmen.

(6) Old Uncas Road - An old road can be followed running in a northwesterly direction from the vicinity of the Cascade Lake trailhead to Moss Lake and generally parallel to the present Big Moose Road. This road is known as the old Uncas road and reportedly is the roadway the Morgan family used to travel by

wagon from the railroad station to their summer home, Camp Uncas.

5. Wilderness

DEC management options and responsibilities are delineated in the Adirondack Park State Land Master Plan definition of Wilderness:

> "A wilderness area, in contrast with those areas where man and his own works dominate the landscape, is an area where the earth and its community of life are untrammeled by man--where man himself is a visitor who does not remain. A wilderness area is further defined to mean an area of state land or water having a primeval character, without significant improvements or permanent human habitation, which is protected and managed so as to preserve, enhance and restore, where necessary, its natural conditions, and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least ten thousand acres of land and water or is of sufficient size and character as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological or other features of scientific, education, scenic or historical value."

Visitors to a wilderness area seek a wide range of experiences. These experiences span the range from the individual who is a wilderness "purist", seeking maximum solitude and contact with nature, to others seeking largely a social experience in which the wilderness is simply a convenient setting. The primary value of the wilderness resource in the Pigeon Lake area is its ability to provide a high degree of solitude to the users throughout most of its interior. Any areas which do receive occasional heavy use, such as Cascade Lake, are primarily located on the periphery of the wilderness. The relatively low use of the interior of the wilderness area tends to minimize encounters between groups. An additional factor which helps maintain a high level of solitude is the seasonal use pattern. Since the primary users of the Pigeon Lake area

include fishermen, hikers, hunters, and cross-country skiers, public use tends to be well dispersed in time.

Certain physical features or characteristics of the Pigeon Lake Wilderness have a direct effect on public use and the availability of solitude. They include:

a. Remoteness - The Pigeon Lake Wilderness is not readily accessible by any interstate or major highway, and it is located at some distance from any major population center.

b. Access to the Area - There is a limited number of access points to the wilderness area. Although trailheads are located around the wilderness perimeter, three are from lakes with limited public access and only three are from a macadam road.

c. Access within the Area - The unit is one of the larger wilderness areas in the Adirondack Forest Preserve. However, there are less than 40 miles of marked trails within the unit. Although additional foot paths occur, these are unmarked and primarily used by hunters and fishermen. Most of these paths dead-end at a lake, pond or camping area. There are few trails, marked or unmarked, which traverse the area or loop back to a trailhead. The marked trails primarily serve the southern half of the area, leaving the northern half essentially trailless.

d. Few Major Physical Features or Attractions - There are very few physical features or attractions in or adjacent to this wilderness area that would tend to attract large numbers of users. Brown Tract Ponds Campground, on the periphery of the wilderness area, is a small campground noted for its privacy and solitude. The nearby Fulton Chain Lakes and Stillwater Reservoir attract large

numbers of people, but the recreational use is centered around the waterbodies themselves rather than the nearby Pigeon Lake Wilderness.

With the exception of Cascade Falls, the physical features within the unit provide few special attractions. The rolling topography and dense vegetative cover of the area do not lend themselves to providing spectacular views.

e. Variation in Scenery - Although there are few unique physical features, the area does provide a variety in scenery. The changes in forest types as one travels from spruce-fir areas to northern hardwood-spruce-fir or northern hardwood areas are very pronounced and produce an enjoyable change. The many small and isolated lakes, streams and ponds tend to break up the forested vistas as do the wetlands and beaver flows or meadows.

B. Man-Made Facilities

There are a number of man-made facilities in the Pigeon Lake Wilderness Area (see Appendix Map #2). These facilities include approximately 32 miles of marked hiking trails, 4.6 miles of cross-country ski trails, 1.6 miles of horse trails, five leantos, remains of one fish barrier dam, three developed trailheads, and the related structures that are attendant with these facilities. In addition to the marked hiking trails, unmarked foot paths can be found in some peripheral locations of the wilderness area.

1. Hiking Trails, Marked - 32 miles

a. Norridge Trail* (blue) - from Twitchell Lake to Beaver River 3.75 mi.

b. Gull Lakes Trail (blue) - from Inlet to leanto on Upper Gull Lake 1.2 mi.

c. Andes Creek Trail (blue) - from Inlet to leanto on Andes Creek .5 mi.

d. Lower Sister Lake Trial (yellow) - from Inlet to leanto on Lower Sister Lake 3.0 mi.

e. Russian Lake Trail (blue) - from East Bay to leanto on russian Lake .75 mi.

f. West Mountain Trail* (blue) - from Judson Road to Raquette Lake 12.0 mi,

g. Hermitage Trail (red) - from the West Mountain Trail to the Queer Lake Trail 1.35 mi.

h. Mays Pond Trail (yellow) - from the West Mountain Trail to the Queer Lake Trail 1.35 mi.

i. Chub Lake Trail (yellow) - from the West Mountain Trail to the Queer Lake Trail 1.35 mi.

j. Windfall-Queer Lake Trail (yellow) - from Big Moose Road to the Queer Lake leanto spur trail junction 3.5 mi.

k. Queer Lake Leanto Spur Trail (red) .5 mi.

l. Queer Lake-Chub Lake Trail (yellow) - from the leanto spur trail junction to Chub Lake 1.9 mi.

m. Windfall Pond-Chain Ponds Trail (blue) 2.7 mi.

n. Cascade Lake Link Trail (blue) - from Cascade Lake to Windfall-Chain Ponds Trail 1.0 mi.

o. Cascade Lake Loop Trail (red and XC ski) - from Big Moose Road around Cascade Lake to rejoin trail near the Herkimer/Hamilton County line 4.6 mi.

*portion of trail on private lands

2. Leantos (including privies)

a. Queer Lake Built 1967

b. Russian Lake Rebuilt 1967

c. Andes Creek Rebuilt 1966

d. Gull Lake Rebuilt 1967

e. Lower Sister Lake Built 1973

Additional pit privies exist on Cascade and Raquette Lakes.

3. Camping Sites (Primitive Tent)**

a. Andys Creek	2
b. Beaver River	1
3. Big Moose Lake	3
d. Cascade Lake	6
e. Chub Lake	2
f. Constable Pond	1
g. Mays Pond	1
h. Queer Lake	4
i. Raquette Lake	7
j. Razorback Pond	1
k. Shallow Lake	6
l. Windfall Pond	2
m. Windfall Pond Trail	1
Total Sites	37

**This information was derived from a 1985 field inventory.

4. Developed Trailheads

a. Windfall Pond Trail	Developed 1970
b. Cascade Lake Trail	Developed 1968
c. Brown Tract Ponds Campground	Developed 1957

5. Fish Barrier Dams

a. Remains of a drop inlet barrier dam at the outlet of Cascade Lake

6. Horse Trails

a. Cascade Lake (mileage included in marked foot trails) 1.6 mi.

7. Cross-Country Ski Trail

a. Cascade Loop (mileage included in marked foot trails) 4.6 mi.

8. Docks

a. A small dock is in East Bay on Big Moose Lake at the Russian Lake Trailhead.

An inventory of bridges within the unit is included in Appendix 21. Of the bridges listed, most are considered as small structures. There are also numerous trail signs within the wilderness area and two major trailhead identification signs located at the Windfall and Cascade trailheads.

Brown Tract Ponds Public Campground, serving the area as a trailhead, was constructed in 1957. There are 90 camping sites and a day use area at this campground. The public can use the campground as a base and enter the wilderness area to the north.

There are several remnants of a youth camp on the northerly shore of Cascade Lake. The remains consist of an old asphalt tennis court and the debris of a demolished fireplace with chimney, both of which are deteriorating.

C. Economic and Physical Impacts

1. Impact of State Ownership on Adjacent Private lands

The economic base of the general area that includes the Pigeon Lake Wilderness is, and always has been, rooted in tourism and recreation. The early settlers were attracted to the area by its natural beauty and abundant fish and wildlife resources. They immediately capitalized on these natural assets by providing services to the "tourists" who followed. This business has been the mainstay of the economy ever since and is dependent, at least in part, on nearby undeveloped State lands, of which the wilderness is a part. In addition, forest preserve lands can provide numerous recreational opportunities to neighboring residents and landowners.

a. Land Resources

To date there have been no definitive economic studies on the impact of State ownership as it effects adjacent private lands or local communities. In some cases, property values of private land next to State holdings are increased by advertising the many benefits of forest preserve lands (Kay, 1985). Landowners seeking privacy and solitude have protection from adjacent private development. State lands also provide the unique opportunity of having a "backyard" with no maintenance costs or taxes and access to various recreational experiences. Forest preserve lands are taxed by local jurisdictions and can be an important source of revenue to these communities.

Public purchase of local goods and services generates recreation dollars whose multiplier effect is felt throughout the surrounding counties.

Some negative situations do exist occasionally where private lands are adjacent to State lands. Noise pollution, trespass and littering are annoyances that may occur where trailheads and parking lots are in close proximity to private holdings.

b. Wildlife

The economic importance of the game portion of New York's wildlife resources is reflected in the expenditures of sportsmen, the income from furs and hides, the meat value of game taken, income derived by outfitters who guide in the area and the recreational value of the wilderness hunting experience. Additional non-consumptive use of wildlife (photography, bird watching, etc.) can augment recreational dollars spent in the local area. Actual wildlife related use levels

and expenditures for the Pigeon Lake Wilderness Area are not known but could perhaps be estimated by user surveys.

c. Fisheries

Quantitative angler use estimates and their economic impact for the Pigeon Lake Wilderness are not available. Angling-related expenditures contribute to the economy of the area but have decreased due to declining fisheries resulting from acid precipitation and fish introductions.

2. Impact of Adjacent Private Lands on State Holdings

a. Land Resources

The private sector's lack of intensive development and commercialism have had little impact on adjacent state lands. Painting and/or signing of approximately 30 miles of boundary lines are necessary for area identification and to prevent trespass. Private lands in the vicinity of Big Moose Lake prevent easy public access/parking to Big Moose itself and the wilderness trails at the eastern end of the lake. Patrons of private hotels and lodges often utilize the nearby wilderness trails and waters for recreational activities.

b. Wildlife

Changes in wildlife habitats occur constantly due to natural processes such as succession and disease or human activities such as logging and residential development. A triangle-shaped area of private land lying between Big Moose Lake on the north and west and Pigeon Lake wilderness on the south and east is closed to big game hunting. The area provides a protective preserve which attracts deer. Consequently, their numbers can be artificially higher than the carrying capacity of the land can support. This effect places

additional stress on available food for deer within adjoining portions of the wilderness.

In addition, artificial feeding of deer, known to occur at Eagle Bay, Raquette Lake, Big Moose, Beaver River Station and Brandreth Park, tends to cause unnatural concentrations of deer. A semi-domestic deer herd results, which, while attractive to tourists and year-round residents, is not in character with a true wilderness. These semi-tame deer impact ornamental shrubbery and forest regeneration on private lands in addition to reducing the carrying capacity of adjacent deer yards on state lands by overbrowsing available foods.

c. Fisheries

Private lands in the vicinity of Mays Pond tend to restrict public access to portions of the wilderness area. A secured easement across this parcel would provide increased public fishing opportunities and enjoyment.

D. Public Use

1. Land Resources

Determination of public use is based upon trail register information, camping permits, and field observations. There are currently three register booths that sample public use within the Pigeon Lake Wilderness Area. Public use information has been collected since ledgers have been kept at the Cascade Lake, West Mountain, and Windfall Pond trailheads. Although this is the best source of use information currently available, trailhead figures can be inaccurate due to the reluctance of some users to sign in. Voluntary trail register compliance percentages can vary

depending on register location, time of visit (season, day of the week), entry hours, length of stay and group size. In addition, there is no accurate way to measure public use via unmarked trails, waterways, bushwacking, etc.

The following chart was developed from register sheet information for the past five years:

Marked Trail	Register Location	1986	1987	1988**	1989	1990
Cascade Lake	Big Moose Road	1457	1721	1517+	1836	2174
Windfall Pond	Big Moose Road	663	874	952+	1132	1100
West Mountain	Higby Road	307	526	639+	796	580
YEARLY TOTAL		2427	3121	3108+	3764	3854

**This information is incomplete due to missing register information.

Use of the area is primarily concentrated in the southern part of the unit, the portion having developed public road access. A review of the records indicates that a combined range of between 3,000 and 4,000 people register annually. Assuming 50% of the wilderness users sign in the ledgers, this would indicate an estimated 6,000-8,000 people enter the area through these three entry points per year. Most of this use would be categorized as day use.

The Cascade Lake area receives the greatest amount of public use within the unit. The lake is readily accessible over a well-defined trail and has been a popular recreational attraction for many years. The northerly shore of the lake was the site of a youth camp prior to State acquisition in 1962, and, as a result, there are several clearings in the area. These clearings are used as camping sites by overnight users and account for a large portion of the total overnight use within

the wilderness area. In addition, this area is receiving increasing use by horseback riders and cross country skiers.

There are 5.5 miles of trails and 4 leantos that are only accessible via boat on Big Moose Lake or by bushwacking. While overall use of these facilities is low, a considerable portion of the use is from seasonal residents of the area. Lack of good public access combined with limited parking tends to restrict general public use of these trails.

Overall use of the Pigeon Lake Wilderness Area tends to be concentrated on those areas having developed recreational facilities. This use is considered low to moderate with certain limited areas such as Cascade and Russian Lakes receiving moderate to heavy use on peak weekends. The public use pattern has been fairly stable with no dramatic changes since register information has been kept.

2. Wildlife

The opportunity to encounter wildlife can be an important part of the wilderness experience. Visitors to the area enjoy wildlife from a number of perspectives, including observation and photography as well as hunting and trapping. Census regarding public use of the Pigeon Lake Wilderness Area by sportsmen is generally lacking. While the wilderness area is not heavily used by sportsmen, portions of the unit are hunted consistently every year by people who reside nearby or by parties that camp in the interior. This area can provide a unique opportunity to those individuals who enjoy a "wilderness" type of hunting or trapping experience.

The importance of wildlife to other recreational users is more difficult to measure. It is generally recognized that wildlife enhances

the recreational experience of hikers, campers, sportsmen and others who enjoy observing wildlife. Ferd's Bog is a popular bird observation area for boreal species.

Access for hunters, trappers, and other recreationists is limited. Public entry from the northeast and east side of the unit is almost non-existent because of the large private land holdings. On the west, only a few locations permit easy access between the Fulton Chain Lakes and Stillwater Reservoir.

3. Fisheries

Information about the numbers of anglers who visit the waters of the Pigeon Lake Wilderness Area is not currently available. However, it is known that fishing ranks as one of the more popular activities in selected waters.

Fishing pressure is generally higher on the more readily accessible waterbodies with angler use of the unit's streams estimated to be light. The majority of fishing activity occurs on the area's trout waters (Cascade Lake, Queer Lake and, to a lesser extent, Windfall Pond, Cranberry Pond, Chub Lake and Oswego Pond) and on area streams that still support brook trout populations. Upper Brown's Tract Pond is fished in the spring by local residents seeking brown bullhead and in the summer by campers seeking warmwater species.

After the trout season opens on April 1, fishing pressure typically peaks in intensity in May when trout can still be found in the cool water near the surface of a pond. Fishing activity declines from late spring through the summer due to formation of a thermocline which moves fish to deeper water. The decline of fishing activity which occurs as

the summer progresses coincides with an increase in pond use by hikers and campers. Angling on brook trout ponds ceases altogether after the trout season closes on September 30. Warmwater angling on Upper Brown's Tract Pond peaks in July-August.

E. Capacity of the Resource to Withstand Use

1. Land Resources

Carrying capacity is defined as: "The amount, kind, and distribution of use that can occur without leading to unacceptable impacts on either the physical/biological resource or the available experience." (Hendee, 1990)

This capacity of the resource to withstand use is very much site related and is dependent on a variety of factors (type and intensity of use, physical conditions, biological resources, etc.) at any specific location. The presence of trails, terrain restrictions, bodies of water or waterways, and scenic qualities tend to concentrate use within a given unit of land. Indications of overuse or improper use may include extensive litter, erosion on trails, compacted soils, obliterated ground cover and the absence of certain wildlife and fish species. These symptoms of overuse were not generally observed in the Pigeon Lake Wilderness Area. Occasional crowding occurs on peak weekends at popular locations, but these intermittent periods are within the capacity of the resource to withstand use.

The following assumptions and calculations based on guidelines in the Adirondack State Land Master Plan were made to obtain an approximation of public use capacity within the Pigeon Lake Wilderness Area. Overnight and day use activity were used as the major indices.

a. Overnight Capacity

The overnight capacity of the unit is almost entirely water related and has not been inventoried. A calculated inventory follows:

1. Small bodies of water, here defined as less than 100 surface acres in size, had hypothetical camping sites assigned taking into account total surface acreage, shoreline irregularity and campsite location practicality, usually relating to site wetness;
2. Large bodies of water, 100 surface acres or more in size, were assigned hypothetical camping sites utilizing the Adirondack State Land Master Plan guidelines specifiying a minimum separation distance of one-quarter mile.

Using the above procedure and considering camping possibilities on 41 interior waters and those portions of Big Moose Lake, Raquette Lake and Stillwater Reservoir on the perimeter of the wilderness area, a total of 102 primitive campsites were hypothetically located including existing leanto locations.

The Adirondack State Land Master Plan definition for primitive tent sites limits camping groups to a maximum of eight people per tent site. If the full compliment of eight people camped overnight on all the hypothetical tent sites, a total of 816 individuals could be accommodated in the Pigeon Lake Wilderness Area on any given night. However, when one considers specific sites and average group sizes of only three to four individuals, the overnight capacity for this area would be reduced. This information is an estimate based on only one criterion with many variables to consider, several of which are subjective.

b. Day Use Capacity

Day use activities generally do not impact an area at the same level as overnight use. However, specific areas close to access points and popular physical attractions can be significantly impacted. The only locations where day use activities have a noticeable impact on the natural resources within the Pigeon Lake Wilderness Area are at Cascade Lake and Ferd's bog on Eagle Creek.

Current use of the Cascade Lake area presently has not seriously degraded the resource. While the popularity of Ferd's Bog is a growing concern, steps to manage use of this fragile area within its capacity to withstand use are discussed later in the plan.

2. Wildlife

The degree and type of public use within the Pigeon Lake Wilderness does not appear to have a significant impact on the wildlife resources of the area. However, a limited number of species within the unit can be vulnerable to disturbance from only a few people. One species in this category is the common loon.

Nests along shore or on islands are more susceptible to human disturbance if boats or canoes can be carried readily into lakes occupied by loons. Nests along shore are also more susceptible to human disturbance where trails follow the shoreline of a lake (Titus, 1978). In the Pigeon Lake Wilderness Area, loons nesting on Queer and Cascade Lakes are more likely to be disturbed by hikers rather than boaters. Loons on Stillwater Reservoir are more susceptible to disturbance by boaters.

Fisher and beaver are species that may be vulnerable to overharvest where easy access is available. The interior of the unit is not highly accessible and, hence, overharvest of these populations over a large area is unlikely under present season regulations. Overall, hunter and trapper densities are considered low to moderate with no detrimental impact on game populations evident.

3. Fisheries

DEC angling regulations are designed to preserve fish populations in individual waters by preventing over-exploitation. In addition to angling regulations, factors at work in the PLWA which serve to limit use include the remoteness of ponds from roads and the seasonal nature of angling in coldwater ponds. The overall fishing intensity on area waters is very light.

Degradation of spawning habitat, an abundance of competing and predacious fish species, and acidic precipitation severely limit natural brook trout production in the PLWA (see Section II.A.2.c.). Queer Lake and, perhaps, Windfall Pond are the only waters in the unit with sufficient natural reproduction to maintain viable brook trout populations. The populations of brook trout in several other waters are maintained by DEC's annual stocking program. Maintenance stocking is needed in many wilderness waters to recreate an approximation of natural conditions and to afford a quality fishing experience (one akin to that which primeval explorers may have encountered).

Under existing angling regulations, the trout populations of stocked and NSA ponds are capable of withstanding current and anticipated levels of angler use. Nevertheless, management activities will emphasize establishing brook trout populations which can sustain themselves

without the aid of annual stocking. Decades of experience on Adirondack brook trout ponds have shown the invasion of competing species is much more detrimental to trout abundance, sizes, and natural reproduction than is angling. The Pharoah Lake Unit Management Plan contains several examples of fisheries that illustrate this problem and discusses the issue in more detail.

Acid precipitation has rendered a number of the ponded waters of the unit incapable of supporting fish life. Some waters which still contain fish have been acidified to a critical degree and have suffered some species loss. Obviously, since it adversely affects fish survival, acid precipitation reduces the ability of the fisheries of affected waters to withstand angler use. The acidification of the waters of the unit will continue until the problem of acid precipitation is eliminated, regardless of angling pressure, unless management actions intended to counteract the acidification process in individual waters are taken.

Because angler use of streams in the unit is believed to be light, the brook trout populations which they support can sustain anticipated harvest levels without damaging their capacity to maintain themselves naturally. The warmwater species found in the unit also have proven to be able to sustain themselves under existing regulations without the need for stocking.

DEC monitors the effectiveness of angling regulations, stocking policies and other management activities by conducting periodic biological and chemical surveys. Based on analysis of biological survey results, angling regulations may be changed as necessary to protect the fish populations of the PLWA.

III. MANAGEMENT AND POLICY

A. Past Management

1. Land Resources

The management of the Pigeon Lake Wilderness Area has always centered around outdoor recreation. The early hotel and cottage owners developed hiking trails to the many lakes and ponds in the general area for the pleasure of visitors.

William Seward Webb, owner of a large portion of the land in the area, recognized the recreational values of his lands and their importance to the local economy. He placed deed restrictions on all the lands he owned in the area known as Township 8, John Brown's Tract. The restrictions, called the Webb Covenant, prohibited using the land for commercial-agricultural, manufacturing, or other purposes and provided for forestry, hotel, camp and cottage uses only. The covenant also provided that all trails and public ways then open to the public on these lands remain forever open for use by the people of the State of New York. For further information on Webb covenant roads, see the Fulton Chain Wild Forest Unit Management Plan.

The Department of Environmental Conservation's initial management activities were started in 1909 and involved forest fire prevention and control only. A fire tower was erected in 1919 on West Mountain and subsequently removed in the mid 1970's after wilderness designation. Recreational management in the form of trail and leanto construction and maintenance started in the 1950's. Existing trails were maintained and leantos previously constructed under permit were rebuilt and maintained. The trailheads at the Cascade Lake and Windfall Pond trails were constructed in 1968 and 1970 respectively.

Brown Tract Ponds Campground was developed in 1957 as a result of the dramatic increase in public use at existing campgrounds and the resultant demand for additional facilities during that period. The campground contains 90 camping sites and a day use area.

Monitoring, management and enforcement of DEC rules and regulations has been primarily a responsibility of the forest ranger force. A seasonal assistant forest ranger has been employed in the past during the summers, usually on a shared basis with other nearby units, to monitor public use and conduct a wilderness education program.

The Division of Operational Services was organized in 1972. All maintenance and rehabilitation projects conducted in the wilderness area have been their responsibility since that date.

2. Wildlife

a. Hunting and Trapping Regulations

Regulations controlling season dates, method of taking, and bag limits for wildlife have been the principal management techniques used in the past. All species harvest regulations, whether for big game, small game, or furbearer, were established to include land areas larger than the Pigeon Lake Wilderness Area. In fact, regulations were written consistently for all of northern New York (equivalent to the Northern Zone). Deer and bear seasons in the Northern Zone are fixed by law.

More recently, DEC has subdivided the state into numerous Deer Management Units (DMU) for big game and Wildlife Management Units (WMU) for small game and furbearers. Each unit is defined according

to distinctive ecological and social characteristics. The Pigeon Lake Wilderness Area lies within DMU 28 and WMU 24.

Several legislative changes have occurred during the past several years that likely have had impacts on use of the PLWA by hunters. Both hunting of bears by using bait and by using dogs have been prohibited, probably lowering use by bear hunters. Use by deer hunters probably has increased because of two legislative changes, one allowing successful archers to purchase a second tag for use during the regular firearms season and similar legislation allowing successful muzzleloader hunters the same privilege.

The calculated harvest of black bear and white-tailed deer during the last five years in the Towns of Inlet, Long Lake, and Webb are as follows:

Town	Season	1987	1988	1989	1990	1991
Inlet	Early	6	3	8	6	4
Inlet	Regular*	3	7	4	1	8
Total		9	10	12	7	12
Long Lake	Early	8	3	6	6	4
Long Lake	Regular*	8	37	14	17	24
Total		16	40	20	23	28
Webb	Early	7	2	8	9	11
Webb	Regular*	20	29	26	15	13
Total		27	31	34	24	24

*Regular season totals may include bears taken during bear-dog, muzzleloading or archery season

Total Deer Take

	Hamilton County		Herkimer County
	Inlet	Long Lake	Webb
1987	44	318	415
1988	89	349	447
1989	64	269	417
1990	59	312	308
1991	64	365	404

Beaver, mink, weasel, fisher, muskrat, marten, opossum, raccoon, skunk, coyote, red and gray foxes, otter and bobcat may be trapped, while all but beaver, mink, muskrat, fisher and otter may be hunted during appropriate seasons. It is mandatory for each trapper to place a tag on the pelts of beaver, fisher, bobcat, coyote, marten and otter. This allows the New York State Department of Environmental Conservation to obtain an estimate of harvest in each township. Calculated harvest for deer and bear and reported harvest for beaver, fisher, bobcat, coyote, marten and otter in the towns of Inlet, Long Lake and Webb for the past five years can be found in Appendix 18.

Since only a small fraction of the total area within the Towns of Long Lake, Inlet and Webb is included within the unit boundaries, harvest figures are not necessarily representative of the actual harvest in the Pigeon Lake Wilderness Area.

b. Wildlife Observation

Historical efforts toward management of non-game wildlife resources in the unit have generally been limited to surveys. Annual aerial surveys of the nesting success of ospreys are conducted throughout northern New York. Surveys of loon breeding success and raven nest sites were performed between 1979 and 1982. The Breeding Bird Atlas was completed in 1985 with cooperation between the DEC and the New York Federation of Bird Clubs (see Appendix 12). To date, the DEC has not pursued any other management or survey projects aimed specifically at the wilderness area other than to record sightings by the public of interesting or unusual species.

c. Nuisance Wildlife

No major conflicts between visitors to the wilderness and resident wildlife have been reported. Beaver activity occasionally floods trails within the unit. The public must find suitable routes around obstructed trails. Campers and hikers uneducated in preventing or avoiding bear problems may occasionally find them to be a nuisance.

3. Fisheries

Fish management in the PLWA has emphasized brook trout restoration through reclamation and stocking programs. Lake trout were stocked historically in Queer Lake.

Pigeon Lake Wilderness Area waters have been subject to general angling regulations of the state. The use of fish as bait has been prohibited in area trout ponds to minimize the likelihood of bait pail introduction of competing and/or exotic fish species. Between 1950 and 1969, five reclamations with rotenone were conducted in PLWA waters. Cascade Lake was reclaimed twice in that interval while Lower Lilypad Pond, Constable Pond and Mays Pond were reclaimed once.

Every named pond in the PLWA, except Townsend Pond, was surveyed by the Adirondack Lake Survey Corporation between 1984 and 1986. Additionally, the ALSC surveyed five unnamed waters in the unit during the same timespan. Altogether, the ALSC gathered data for 37 waters in the PLWA. Historical biological data is available for 27 waters in the unit. Section IV.D and Tables 1 and 2 present pond-specific survey and management data for all PLWA waters.

Very little active fishery management has been undertaken on streams within the PLWA because of their remoteness and small size. Few area streams in the unit have received biological surveys.

B. Goals

1. Land Resources

a. Perpetuate the Pigeon Lake Wilderness Area as wilderness where the evidence of man is minor.

b. Maintain the opportunity for a high degree of solitude.

c. Preserve and protect the wilderness from influences that diminish wilderness character and value in accordance with the Adirondack State Land Master Plan.

2. Wildlife

a. Preserve and protect unique, critical and significant wildlife habitats essential to the perpetuation of wildlife.

b. Perpetuate native, naturally occurring wildlife as part of the various ecosystems within the PLWA.

c. Provide the opportunity for the diversified utilization and enjoyment of the wildlife resources within the concept of wilderness management and philosophy.

d. Manage the wildlife resources so that their numbers and occurrences are compatible with the public interest to assure that people are not caused to suffer from wildlife or the users of wildlife.

e. Assure that the public's desire for information about wildlife and its conservation, use and enjoyment is met, together with their desire for understanding the relationships among wildlife, humans and the environment.

3. Fisheries

The "Guidelines for Fisheries Management in Wilderness, Primitive, and Canoe Areas" (Appendix 19) form the foundation for the following goals for PLWA waters:

a. Restore and perpetuate fish communities which represent natural ecological conditions (Guidelines 1 and 3);

b. Provide recreational angling as part of a larger wilderness experience emphasizing quality over quantity (Guideline 2);

c. Protect the fishless state of naturally barren waters that have not been stocked (Guideline 5).

Management actions appropriate to achieve those goals include stocking, reclamation and liming (Guidelines 4, 6 and 9 respectively).

4. Public Use

a. Insure that public use is compatible with wilderness values.

5. Water Resources

a. Preserve and protect all aquatic environments within the area.

C. Objectives

1. Land Resources

a. Reduce soil erosion and/or stream siltation occurring from lack of proper trail maintenance by:

(1) Preparing and analyzing a trail inventory and developing a plan for trail maintenance by 1997;

(2) Inventorying all bridges and elevated dry tread by 1997;

(3) Schedule for the replacement and/or construction of facilities on a priority basis using a policy of resource protection rather than user convenience for each of the five years covered by this plan.

b. Develop a specific fire management policy for the unit by 1997.

c. Develop an inventory of rare, endangered and threatened plant species as these plants are found in this area.

d. Continue maintenance on approximately 30 miles of marked boundary lines on a 5 to 10 year rotation. Specific lines and maintenance intervals will be determined by area forest rangers.

e. Develop a leanto policy for the unit and provide a list of sites where:

(1) Existing leantos will be maintained and replaced if necessary;

(2) Existing leantos will be maintained, but not replaced;

(3) Additional leantos will be built, if appropriate.

2. Wildlife

a. Review and analyze proposals for major actions likely to alter natural habitats in order to minimize adverse effects and maximize benefits for wildlife and the users thereof.

b. Investigate the feasibility of re-establishing self-sustaining wildlife populations of species that are extirpated, endangered, threatened or of special concern in habitats where their existence will be compatible with other elements of the ecosystem and human use of the area.

c. Prevent the establishment of wildlife species in habitats where their existence will be incompatible with other elements of the ecosystem or human use of the area.

d. Maintain and perpetuate annual hunting and trapping seasons as legitimate uses of the wildlife resources compatible with wilderness recreation.

f. Provide technical advice and consultation to individuals, organizations or agencies interested in wildlife management or whose programs affect the wildlife resources.

g. Regulate the recreational and commercial use of wildlife to assure that such uses are compatible with wilderness values and the capacity of the wildlife resource to withstand use.

h. Provide optimum access for public use of the wildlife resources consistent with the management of the area and the ability of the resource to withstand use.

i. Identify and publicize public opportunities for hunting, trapping, observation, and enjoyment of the wildlife resources.

j. Maintain maximum beaver population levels compatible with range carrying capacity and land uses for associated recreational, economic and ecological benefits.

k. Control nuisance wildlife only when necessary, feasible, and the only practical alternative to prevent unreasonable damage to the public interest.

3. Fisheries

a. Increase the abundance of the depressed, native brook trout, through reduction in the distribution of nonnative and native-but-widely introduced fish species, while maintaining the security of all other native fishes.

b. Restore populations of the native lake trout and lake chub formerly indigenous to the PLWA.

c. Partially mitigate the substantial loss in brook trout abundance in the PLWA by liming a limited number of waters.

d. Increase knowledge of the aquatic resource base through survey of one previously unstudied water.

e. Maintain existing brook trout fisheries dependent on stocking. Maintain existing warmwater fisheries.

The above objectives are based on a thorough review of the inventory data and on the "Guidelines for Fisheries Management in Wilderness, Primitive and Canoe Areas". That review is provided in the Fisheries section under Projected Use and Proposed Management (Sections IV.D. and II.A.2.c).

4. Public Use

a. Obtain better use data by installing additional trail registers within the next five years.

b. Conduct a user education program for the Pigeon Lake Wilderness by continuing to assign an assistant forest ranger to the area.

c. Designate selected primitive campsites where necessary.

d. Evaluate the need for additional facilities by 1997 based on an assessment of public use.

e. Develop a specific search and rescue policy.

5. Water Resources

a. Monitor public use of favored shoreline camping locations (Russian Lake and Cascade Lake) to prevent overuse and subsequent shoreline degredation.

IV. PROJECTED USE AND MANAGEMENT PROPOSED

A. Facilities Development (See Appendix Map #3)

1. Snowmobile/Horse Trail

Snowmobiling is a very popular winter sport in the region that includes the Pigeon Lake Wilderness Area. The Towns of Webb, Herkimer County, and Inlet, Hamilton County, have developed extensive systems of groomed trails that attract thousands of snowmobile enthusiasts to the area annually. The impact this group creates on the local economy is estimated to be several million dollars per year and is considered essential to maintain the economic well-being of the area.

The popularity of the sport has created a safety problem on the Big Moose Road. Weekends with good snowmobile conditions may see as many as one thousand snowmobiles using the road between the hamlets of Big Moose and Eagle Bay daily. The resulting mix of logging trucks, automobiles, and snowmobiles creates a serious safety problem for both snowmobilers and motorists.

A marked trail of approximately two miles within the unit should be constructed utilizing as much as possible old wagon roads evident on the 1954 Big Moose 15 minute USGS quadrangle. This trail would significantly reduce the safety hazard by removing the snowmobile traffic from the public highway.

Although the entire trail impacts on forest preserve lands in two different areas, it should be addressed in its entirety rather than in separate unit management plans. This trail will be located along the Big Moose Road corridor utilizing private lands, forest preserve lands classified as wild forest, and, where necessary, forest preserve lands classified as wilderness (see Appendix 25). The trail will be

constructed and maintained in accordance with forest preserve policies for snowmobile (Class A - see Appendix 20) and horse trails.

The portion of the trail crossing the wilderness area will be within 500 feet of the wilderness boundary as required by the Adirondack State Land Master Plan. The trail will serve as a marked horse trail connecting with the existing horse trails around Moss Lake within the Fulton Chain Wild Forest.

The specific location of this trail will be the responsibility of DEC personnel with assistance from the Town of Webb. Necessary permission to cross the various parcels of private lands will be the responsibility of the Town of Webb as will all construction and future maintenance costs. Construction will not be initiated until the trail has been completely located and all necessary permissions to cross private lands obtained. A site-specific work plan covering this project will be forwarded to the APA for their review and any additional SEQR or permit compliance prior to any construction activity.

Provisions have been made in the Fulton Chain Wild Forest Unit Management Plan (January 1990) for those portions of the trail included in that unit.

2. Trailhead Parking Areas (3)

a. Cascade Trailhead

The parking facilities for the Cascade Lake trailhead are located in an old borrow pit on the inside of a curve and just under the brow of a hill. This combination of factors creates a traffic safety hazard, particularly for vehicles leaving the parking area. The parking facility will be relocated to an area adjacent to the Big Moose Road and approximately one-half mile north of the present site.

A facility to park 12 cars and a new one-quarter-mile section of trail connecting the parking area with the existing trail system will be developed. The parking area will be rectangular in shape with a length of 100 feet along Big Moose Road and a width of 60 feet. Pink flagging currently outlines the boundaries of this facility (see Appendix 22). Construction activities will be limited to the application of gravel and the removal of 30 trees.

The existing parking lot then will be barricaded to prevent further use.

b. Higby Road Trailhead

Parking facilities are not provided along Higby Road for users of the marked DEC trails east of the Judson Road or those putting car-top boats or canoes into Big Moose Lake. Vehicles using these facilities park either along the shoulders of the road or in the parking area used by the Big Moose Lake Property Owners Association, frequently causing traffic congestion. The DEC will continue its attempt to acquire land in the vicinity of the trailhead for parking facilities and, when successful, construct a parking area with a capacity up to ten cars.

c. Ferd's Bog

Ferd's Bog, a wetland area on Eagle Creek, receives considerable use as an observation area for bird life. Various publications have described this location as an outstanding birding area for boreal species. Increased popularity has occurred not only among local bird groups but also those from neighboring states. This change in use is starting to impact the unique nature of the area with resource

degradation (erosion, widening herd paths) and vegetation loss occurring on the bog surface.

Present access to the bog area is via an unmarked trail originating on private lands. People using this trail frequently park on the road shoulder or in a private drive blocking access to a seasonal camp. A small, three-car parking area and an access trail will be developed wholly on state lands in the area (see Appendix 23). A recent acquisition (Project Q-AFP Hamilton 197) will provide a suitable site for both the parking area and trailhead. Location and construction of these facilities will be undertaken after the property boundaries are surveyed and marked with assistance from the forest ranger responsible for the area.

3. Trail Registers (8)

User data for this unit is presently gathered at only three of the nine main entry points served by marked foot trails. Trail register booths will be erected at all marked trail entry locations to provide more detailed information on public use within the wilderness. Trails needing registers include the West Mountain Trail at Raquette Lake, Russian, Sister and Gull Lakes Trails and the Norridge Trail at both Beaver River and Twitchell Lake. Additional register booths will be placed at the beginning of the proposed Shallow Lake and Ferd's Bog trails following construction.

4. Trails (4)

A number of short foot trails are proposed for construction in this unit. Three of the trails are of a high priority -- the Ferd's Bog Trail, the presently unmarked trail to Shallow Lake, and the Norridge connector trail -- and are included in the scheduling of this plan. The

remaining parts of the trail system are considered low priority. Trail construction will be completed as funding permits with each project reviewed in regard to public needs and impact to the resource.

a. Ferd's Bog Trail

The increasing popularity of Ferd's Bog as a wildlife observation area has led to some conflicts between adjacent landowners and area visitors. A small, developed parking area (see Section IV.A.2), in combination with a marked hiking trail will control use and help mitigate resource damage.

The current lack of developed facilities has not deterred public use, with 500 visitors known to have utilized the bog area during 1987 (comments from Gary Lee, Forest Ranger). A majority of this use occurs from mid-May through July when numerous boreal bird species inhabit the area.

Seasonal flooding of the quaking bog surface and portions of the main trail encourages numerous herd paths on the sensitive bog surface.

Total trail length will be approximately 0.5 mile, with the last section of foot trail consisting of approximately 500 feet of elevated treadway terminating near the center of the bog in the vicinity of Eagle Creek. This walkway will be designed to blend with the surrounding environment and require only minimal maintenance (Appendix 24). The location of this facility, along with a small observation platform at the trail terminus, will tend to control public use within the wetland itself. This facility will enhance the observation of flora such as sundew, pitcher plants, white-fringed

orchids, grass pink, and a variety of bog shrubs in addition to boreal bird species without damaging the fragile resource itself. Appropriate wetland permits will be secured from the APA prior to any trail construction.

b. Shallow Lake

An unmarked trail originates at Brown Tract Ponds Campground and continues approximately two miles to Shallow Lake. The trail receives substantial use from anglers and campground users. A makeshift bridge has been built over Beaver Brook. The trail will be marked, the bridge rebuilt and the system maintained by the DEC.

c. Norridge Connector Trail

The DEC-maintained Norridge Trail currently connects Beaver River Station to the Twitchell Lake area. By crossing private lands on the northwesterly shore, hikers are able to reach the public access at the southwest portion of Twitchell Lake. Varying trail conditions create hiker inconvenience and confusion with attendant loss of privacy to nearby camp owners.

A 2.5-mile connector trail bypassing most private lands and located within the Fulton Chain Wild Forest and Pigeon Lake Wilderness Area has been flagged. The trail will be four feet wide and will start from the yellow-marked trail to Razorback Pond extending approximately 1400 feet through the Fulton Chain Wild Forest. Continuing across a 50-foot easement (Irwin), the trail will enter the Pigeon Lake Wilderness Area, passing by Oswego Pond and intersecting the Norridge Trail after approximately two miles. A map showing existing and planned foot trails in the vicinity of Twitchell Lake can be found in Appendix 26.

d. Constable Pond-Russian Lake-Andy's Brook-Gull Lakes

This proposed trail system is approximately three miles in length. It will provide public access, via a marked trail, to the several trails and leantos on the north side of Big Moose Lake presently accessible by boat only.

5. Cascade Lake

Cascade Lake is located near a main highway and is readily accessible by way of a short, well-defined hiking trail. These factors, in combination with an attractive scenic setting, abundance of tentsites, and sandy shoreline, attract a large number of people to the area.

While the majority of use consists of day activities (horseback riding, day hiking, cross-country skiing), a substantial amount of overnight camping activity occurs during the summer and fall. A system of designated tentsites will be established to direct overnight use to appropriate sites (see Section IV-C-1).

The popularity of this area has not exceeded the physical carrying capacity of the resource although a problem is developing regarding sanitation. To solve this problem, two pit privies will be installed--one in the area where the trail first joins the lake, and one in the area known as the ball field. Educational efforts on the wilderness ethic including the proper disposal of human wastes will also be increased.

6. Fish Management Facilities

Fish barrier dams will be constructed as necessary on the outlets of ponded waters scheduled for reclamation (see Section IV.D). On-site surveys will be conducted to determine whether natural barriers exist, and if not, whether sites suitable to create barrier dams are present.

The remains of the drop-inlet barrier dam below Cascade Lake are now so deteriorated that they are difficult to notice.

A1. Facilities Removal

The fish barrier dam on the outlet of Cascade Lake is no longer functional. Since this structure has twice failed to achieve its purpose and is no longer maintained, it will be left to the forces of nature and allowed to deteriorate. The dam is of the drop inlet type and is hardly recognizable as a man-made structure.

The asphalt tennis court remaining from the former youth camp on Cascade Lake is slowly deteriorating. Both herbaceous and woody plants are beginning to break through the asphalt and organic debris is completely covering the crumbling court surface. These conditions will continue and increase until the asphalt has completely deteriorated. No other efforts are necessary to bring about the removal of this facility.

The demolished fireplace with chimney at the former youth camp is also rapidly deteriorating. It is effectively screened from view during the high use season by shrubs, tree seedlings, and vines. The debris will soon be covered with organic matter and effectively screened from sight.

B. Maintenance and Rehabilitation of Facilities

All facilities will be maintained in accordance with the guidelines for wilderness areas as set forth in the Adirondack Park State Land Master Plan. Existing structures, except for the previously mentioned fish barrier dam, will be maintained in a safe, usable condition. Should any structure be damaged, its replacement will be initiated only after an individual review demonstrates a need to either protect the resource or provide for public safety.

1. Trails

Maintenance of trails will be minimal and the self-sufficiency of the user will be emphasized. All trails will be inspected annually and minor maintenance conducted as the need occurs. This activity will consist of limited blowdown removal, limited brushing and maintenance of all structures to provide for safe public use. Major maintenance such as leanto or foot bridge rehabilitation, particularly if such activities necessitate the use of motorized equipment, will be undertaken at three-year intervals only. The cross country ski trail will require annual blowdown removal.

Standard trail markers will be put up as needed. Historically, these markers were used frequently on a trail to keep it well marked for the hiker. However, in keeping with wilderness philosophies, markers will now be used sparingly and only as an assurance to the novice wilderness user (as well as those more experienced) that he/she is still on the right trail.

Budgeting and fiscal restraints require a priority system for scheduling trail maintenance. Trails and/or trail segments in this unit will be maintained according to the following priority:

a. Cascade Lake Loop Trail

b. Shallow Lake Trail

c. Hermitage Trail

d. Windfall-Queer Lake Trail

e. West Mt.-Raquette Lake Section

f. Constable Pond-West Mt. Section

g. Russian Lake Trail

h. Constable Pond-Mays Pond-Queer Lake Section

i. Constable Pond-Chub Lake-Queer Lake Section

j. Lower Sister Lake (includes Andy's Spur) Trail

k. Gull Lakes Trail

l. Norridge Trail

m. Cascade Lake-Chain Ponds-Queer Lake Section

n. Cascade Lake-Windfall Pond Section

2. Bridges and Drytread

Three (3) bridges received major rehabilitation during the fall of 1983 and will require only minor maintenance during the term of this plan. They are:

a. Constable Creek

b. Windfall Pond Outlet (2)

Bridges and dry tread that deteriorate to the point of becoming unsafe will be either removed or replaced.

3. Leantos

The five leantos in this unit are in good structural condition. Minor maintenance such as staining and recaulking will be accomplished as needed. Pit privies associated with the leantos will be relocated as necessary. Fireplaces will be phased out as they deteriorate and be replaced with fire rings. Leanto sites will be kept free of litter.

4. Pit Privies

All pit privies will be relocated as needed.

5. Trailheads

All trailheads will be maintained in a neat, litter free condition.

6. Docking Facilities

Docking facilities at the Russian Lake trailhead will be maintained in a safe, usable condition.

7. Fish Management Facilities

Natural or artificial barriers which block movement of fish into reclaimed waters are critical to prevent the reintroduction of nonnative fishes. Because they are essential fish management tools, fish barrier dams are included in the Adirondack Park State Land Master Plan as one of the few structures which may be constructed, rehabilitated, and maintained in wilderness areas. Ponds will be reclaimed only if there is no outlet, if a natural or man-made fish barrier is present, or if a fish barrier can be constructed prior to reclamation.

Fish barrier dams which must be constructed in conjunction with the reclamation projects scheduled for the term of this plan will be sited at unobtrusive locations to minimize visual impact and will be constructed of natural materials. Barrier dams are inspected annually by regional operations or fisheries personnel. Maintenance and repair of barrier dams is a high priority for the fisheries management program.

C. Public Use Management and Controls

Public use of this unit is relatively light. Between 3,000 and 4,000 people sign the registers at the Windfall, West Mountain, and Cascade trailheads yearly. Because the occurance of public use is fairly well distributed throughout the year, the physical and social impacts of this use tend to be minimized.

The heaviest use in the unit occurs in two relatively small areas around Cascade Lake and Russian Lake. Both of these locations have been able to absorb present use without any severe adverse impacts.

Public use management and control activities will emphasize user education regarding low-impact camping and the wilderness ethic. Maps, brochures and proper signing will be utilized to inform the public of proper wilderness behavior and the various DEC rules and regulations governing this use.

1. Signing

Each main entry point will be equipped with a trail register to collect information on the amount and type of public use within the interior.

Most PLWA ponds and lakes are closed to bait fishing with the use of minnows. Reclaimed and limed waters and all major access points will be posted with signs informing sportsmen of this regulation and how using fish as bait can harm aquatic ecosystems via introduction of undesirable fish species. Major access points include trails beginning at or leading to Upper Brown's Tract Pond, Cascade Lake, Queer Lake, and Constable Pond.

2. Tentsite Designation

All camping will be addressed by 6NYCRR 190.3(b) which states, "Camping is prohibited within 150 feet of any road, trail, spring, stream, pond or other body of water except at camping areas designated by the Department". This rule and regulation allows the DEC to control camping in heavily used areas where site degradation has occurred or is likely to occur. Suitable sites that are within 150 feet of lake shores

but have proven durable through previous use will be designated for continued use.

The following chart depicts the more heavily used camping areas in the Pigeon Lake Wilderness Area and the current and projected status of primitive tent sites over the next five years (see Appendix Map 5).

PRIMITIVE TENT SITES - PIGEON LAKE WILDERNESS AREA

LOCATION	EXISTING	TO BE CLOSED	TO BE DESIGNATED
Big Moose Lake	3	1	2
Cascade Lake	6	2	4
Chub Lake	2	1	1
Queer Lake	4	1	3
Raquette Lake	7	4	3
Shallow Lake	6	3	3
Windfall Pond	2	1	1

This system of site designation involves an examination of the physical characteristics of specific sites along with a determination of the carrying capacity for these locations. Certain waterbodies such as Cascade, Shallow, and Raquette Lake, due to size, form, and vegetation, can offer a degree of solitude for several groups if widely dispersed. Smaller lakes and ponds may be limited to a single established site. This tentsite designation program will be instituted in year one of this plan and completed by year five. Designated sites will comply with Adirondack State Land Master Plan guidelines for wilderness areas which require primitive tentsites to be out of sight and sound of each other and generally spaced one-quarter mile apart, except where severe terrain constraints prevent this attainment.

Overnight camping (less than ten individuals) will be allowed in most other locations as long as the "150 foot" rule is observed. This will allow occasional overflow camping away from the shoreline, trails, and waters during peak weekends and holidays.

3. Horse Trails

At present, horses are allowed to use that portion of the Cascade Lake Trail from the Big Moose Road to the northwest shore of Cascade Lake. The actual number of horseback riders utilizing this trail is not known. While use is estimated to be light, resource impacts can be proportionately high when compared to other recreational activities. Problems associated with horse use in popular camping areas and along the beach on Cascade Lake will be addressed with appropriate signs. In addition, the proposed snowmobile trail adjacent to Big Moose Road will be designated as a horse trail with a connecting link to the Moss Lake system (Fulton Chain Wild Forest). A suitable crossing in the vicinity of the Moss Lake parking area will be created to keep horses away from the public highway for safety reasons and to provide a more usable and desirable horse trail system.

4. Group Use

In the past, large groups (10 or more) obtained camping permits as required by DEC rules and regulations prior to overnight use of the wilderness area. The capacity of a wilderness area to absorb the impacts of large groups while retaining its wilderness qualities is limited. Although group camping typically comprises only a small percentage of total use, it has a disproportionate impact on both the physical characteristics of the wilderness and the opportunity for solitude desired by other wilderness users. Few primitive tentsites can physically accommodate large groups without excessive resource degradation. Problems such as excessive tentsite wear and tear, soil compaction, congestion on trails, and lack of proper human waste disposal are

often associated with group use. In addition, the social interactions of larger groups (noise, tent cities, etc.) have a greater visual impact and can diminish the outstanding opportunities for solitude of other nearby users. A review of overnight group use has been initiated and a policy will be developed to limit group use in accordance with the guidelines of the ASLMP. However, during the interim, DEC will control, and eventually eliminate, large group use of this wilderness area through the phase-out of group camping permits over a two year period. Year One of the phase-out process will be educational in that all groups requesting permits will be advised of the impending change. Year Two group camping permits will not be issued in the unit, and groups of ten or more campers will be directed to adjacent wild forest areas.

5. Rare and Endangered Species

The DEC will work closely with the Natural Heritage Program in locating all rare and endangered species and critical habitats in the unit. When required, public use will be diverted to protect sensitive areas.

6. Fishing Use

Fishing pressure on PLWA waters is very light due to their remoteness. Native fish populations are not threatened by overexploitation from sportsmen, rather, they are endangered by introductions of non-native and NBWI competing species and acid precipitation. Bait fishing with minnows is already illegal in most PLWA ponds, but such regulations must be reinforced in the minds of the public. The DEC has proposed changes to the bait fishing laws which will enable entire land use areas to be closed to the use of fish as bait (including streams and nontrout waters). The law currently specifies that ponds must be listed

individually, but such a practice is impossible for the many, small, unnamed waters in the PLWA. If DEC's proposed changes are enacted into law by the Legislature, the Pigeon Lake Wilderness Area will be closed to the use of fish as bait. Pamphlets, brochures, and the fishing regulations guide prepared for public distribution will emphasize this regulation.

Conservation law enforcement is critical to the successful implementation of fish and wildlife regulations. Environmental Conservation officers and forest rangers should routinely patrol area waters, particularly waters with recent management actions and/or waters containing only native species. Enforcement officials should be kept abreast of management actions and be fully informed of the ecological/social reasons for such actions and for the regulations they enforce.

D. Fish and Wildlife Management Programs

1. Fisheries

Unit inventory data for the Pigeon Lake Wilderness indicates that most native and native-but-widely-introduced (NBWI) fish species, particularly brook trout, have declined since the 1930's (Table 4). Nonnative fish species have remained stable or declined slightly.

Historically, twelve PLWA ponds were known to have viable brook trout fisheries (Table 4). Recent survey data indicates that only three viable brook trout fisheries remain in the unit. Thus, there has been a net loss of nine waters. ALSC surveys indicate that two of these waters are now fishless and two no longer support brook trout. In the remaining five ponds, only one or two brook trout were captured. Thus, these waters must be classified as "marginal" for the species.

Two native species, the lake trout and lake chub, have been apparently extirpated from the unit. Both species were formerly present in Queer Lake. Three other native species, the pumpkinseed (NBWI), creek chub (NBWI) and white sucker, have declined within the unit. Native populations of brown bullhead (NBWI), common shiner, and blacknose dace appear to be stable (Table 4).

White sucker, pumpkinseed, creek chub and northern redbelly dace were, respectively, the third, fifth, sixth and eighth most common fish species collected by the ALSC (Gallagher 1990). In spite of declines, these species are not endangered within the unit and especially not within the Adirondack Ecological Zone. Creek chubs are most commonly associated with small, gravelly streams (Scott and Crossman 1973) and are probably more common in the PLWA than ALSC pond surveys would indicate. Management activities designed to enchance or restore white sucker, pumpkinseed, creek chub and northern redbelly dace are unnecessary. Management activities proposed for other objectives will not seriously impact any of these three species.

The number of fish communities comprised of just native species has declined from historic levels. Mixed communities of native and nonnative species have remained stable in number. Recent surveys have documented the presence of two nonnative fish monocultures in the PLWA. Purely nonnative monocultures were not found historically within the unit. Two other monocultures are comprised of a native-but-widely-introduced species. ALSC survey data indicates that there are two brook trout monocultures in the unit, but in both cases, only one brook trout was captured. None of these monocultures can be ascribed to past

reclamations, but rather, they reflect the obvious loss of fish species diversity due to acid precipitation within the unit.

As discussed in the Fisheries section of the Resource Inventory Overview, brook trout were clearly a significant component of the historic Pigeon Lake Wilderness. Based on the depressed status of brook trout populations, efforts to restore natural fish communities in the PLWA should increase the abundance and distribution of brook trout. Also, native populations of lake trout and lake chub should be restored within the unit. Reclamations are the only practical technique available to reduce or eliminate the nonnative and native-but-widely-introduced fishes in candidate waters and thus achieve the low levels of competition necessary to restore these three species. Liming will be necessary in several waters to restore/maintain water chemistry conditions suitable for brook trout. Therefore, the following actions have been proposed, subject to prereclamation/preliming surveys. Such surveys include assessment of physical and chemical characteristics, presence of feasibility of constructing a fish barrier, and configuration of wetlands.

a. Reclamation of the Cascade Lake watershed to eliminate nonnative yellow perch. This reclamation would include Cascade Lake and its inlet streams, Cascade Lake outlet, and Unnamed Pond B-P5332. The extent of the reclamation would depend on the site location for a new fish barrier dam. Cascade Lake was previously reclaimed in 1963 and 1969, but both reclamations failed due to structural damage of the barrier dam by beaver activity. The former barrier site was in a low, gradient area of Cascade Brook, prone to flooding by beaver

activity. A higher gradient site for a new dam must be found or reclamation plans will be cancelled.

b. Reclamation of Queer Lake and its headwater, Unnamed Pond R-P330, to eliminate nonnative golden shiner and reduce competition from NBWI species. Introductory stocking after reclamation will consist of wild (heritage) strain brook trout, Raquette Lake strain lake trout, and lake chub from a yet-to-be indentified Adirondack water. The restored fish community in Queer Lake will closely resemble a pristine Adirondack aquatic community. Periodic liming may be necessary to maintain the fish community in Queer Lake and counteract the continuing menace of acid precipitation. Pre-reclamation survey work will determine whether a fish barrier dam will have to be constructed to prevent invasion by other fish species. A 1984 ALSC survey of Unnamed Pond R-P330 indicates that the pond is acidic and may be fishless. It will be reclaimed to ensure success for the Queer Lake restoration, but the pond would not be stocked afterwards.

c. Resurvey of Windfall Pond to assess the status of its wild brook trout population. The 1985 ALSC survey of Windfall Pond captured only one brook trout. A 1990 DEC survey captured five brookies and eight white suckers. Abundant populations of cyprinids and white sucker may be affecting brook trout survival through high levels of interspecific competition. Regular monitoring of the fish community is necessary to document the decline of brook trout in Windfall Pond. Reclamation and restocking with Windfall strain trout is proposed only if extirpation of the parent stock is imminent. If the parent stock of brook trout is in no danger, Windfall Pond will be managed to protect and preserve its native fish community. It is expected

that reclamation will not be necessary within the five-year scope of this plan. Forest rangers report rumors of unauthorized brook trout stocking in Windfall Pond. Confirmation of such rumors would increase the necessity for reclaiming the pond.

d. A biological survey of Unnamed Pond R-P5062 to assess its fish community and morphological/chemical characteristics will be conducted. This remote water lies north of Raquette Lake and is a headwater for a tributary of Brandreth Lake outlet. If brook trout are captured during the survey, they should be assessed as a potential heritage strain.

e. Bathymetric surveys will be conducted on four waters: Chub Lake, East Pond, Pelchar Pond, and Pigeon Lake. Unnamed Pond B-P760 already meets the chemical/physical criteria for liming, but must be resurveyed to assess the status of its fish community. Liming is proposed for any of these waters which would qualify for such action under criteria listed in the FGEIS on liming. Brook trout will be reintroduced after liming. Restoration of these ponds will return the PLWA to a semblance of its former character.

Results of fish management activities proposed in this five-year management plan are:

a. Four newly reclaimed ponds. If all reclamations are completely successful, two new brook brout monocultures would result, one polyculture of brook trout, lake trout and lake chub, and one pond would remain fishless. Experience indicates about 50 percent of reclamations fail to eliminate all fishes. Native fishes including brown bullhead, creek chub, and northern redbelly dace have been known to survive

reclamation attempts in Adirondack waters. Interestingly, Bradbury (1986) indicates that native species are most likely to remain established after reclamation. The Cascade Lake watershed includes two of the four reclamations proposed. Native species surviving in either water will quickly repopulate both lakes. Achieving brook trout monocultures in the Cascade Lake watershed is desirable, but unlikely. The polyculture proposed for Queer Lake restores two native species to the unit that have been entirely eliminated.

b. Five newly limed waters. Pelchar Pond would be a native community of pumpkinseed and brook trout. Queer Lake may be a sixth limed water and would be a polyculture of brook trout, lake trout and lake chub. Restoration of suitable water quality to support fish life in these six waters may well reopen these waters to colonization by fishes now surviving in refugia associated with springs or small tributaries in the ponds' watersheds. It is not possible to predict the nature of the polycultures which would result from such colonization.

c. Three ponds where only native fishes currently exist. Windfall Pond is included in this category. One of these ponds is a brook trout monoculture, while the other is a monoculture for brown bullhead (NBWI).

d. Two ponds where only nonnative fish monocultures exist.

e. Six ponds with nonnatives and natives. A 25 percent reduction in the number of ponds containing nonnatives. Two of these mixed waters contain the only warmwater species in the unit.

f. Twenty ponds with no fish.

g. Thirty ponds that have never received surveys. The unsurveyed ponds are generally remote, small, beaver impoundments, tributary to acidic waters, and likely to support no fish.

h. One newly surveyed water.

The above activities will restore natural (historic) fish resources to several waters in the PLWA and, thus, are consistent with goal "a" for fish management activities (Section III.B.3). In addition, they provide angling opportunity as per "b". The nature of access, the emphasis on native fishes, and the aesthetic setting add the wilderness aspect to angling in the Pigeon Lake region. Quality of the angling experience, as opposed to quantity, is emphasized by excluding the following fish management activities:

- Intensive managment by way of increment stocking through the fishing season to maximize the quantity of trout caught;
- Stocking of large-sized yearling trout for put-and-take fisheries;
- Regulations which maximize use such as year-round seasons;
- Reclamation for the benefit of nonnative species.

Liming and stocking of brook trout is proposed for one water, Unnamed Pond B-P760, which may have been barren of fishes. The pond is acidic but lacks other characteristics of a bog water. It may well have supported fish life in the recent past. Since this plan will leave at least 20 other ponds fishless (several of which were once brook trout fisheries), and most of the 30 unsurveyed waters are likely to be fishless, goal "c" is met. Guideline "c" and FGEIS liming criteria are intended to protect naturally fishless bog ponds which are an historic component of the Adirondacks but not ponds acidified by acid precipitation. The unnamed pond discussed here, from all appearances,

falls into the latter category and should be managed to restore a native fish community.

Retreatments of reclaimed ponds are not automatically scheduled or planned. Retreatment needs, if any, will be based on biological surveys and incorporated in five-year revisions to the unit plan. Remote waters, such as those in wilderness areas, typically remain free of competing fish much longer than roadside waters. This may be because of the difficulty of transporting live bait fish to remote wilderness ponds. There are numerous examples of remote waters that have remained free of competing species in excess of 15 to 20 years.

INDIVIDUAL POND DESCRIPTIONS

The following is a brief description of each pond in the PLWA. Definitions of fisheries management classifications referred to in this section of the unit management plan are noted below:

Adirondack Brook Trout Ponds - Adirondack Zone ponds which support and are managed for populations of brook trout, sometimes in company with other salmonid fish species. These waters generally lack warmwater fishes but do frequently support bullheads.

Coldwater Ponds and Lakes - Lakes and ponds which support and are managed for populations of several salmonids. These waters generally lack warmwater fishes but frequently support bullheads.

Other Ponds and Lakes - Waters containing fish communities consisting of native and nonnative fishes which will be managed for their intrinsic ecological value without any new species introductions.

Two-Story Ponds and Lakes - Waters which simultaneously support and are managed for populations of coldwater and warmwater gamefishes. The bulk of the lake trout and rainbow trout resource fall within this class of waters.

Unknown Ponds and Lakes - Waters which could not be assigned to the subprogram categories specifically addressed in this document due to a lack of or paucity of survey information. These waters usually contain native and nonnative fishes which will be managed for their intrinsic ecological value without any new species introductions.

Warmwater Ponds and Lakes - Waters which support and are managed for populations of warmwater gamefishes and lack significant populations of salmonid fishes.

1. **Cascade Lake** (B-P 747) and **Unnamed Pond** (B-P 5333) Cascade Lake is a 101-acre Adirondack brook trout pond with a native and nonnative fish community consisting of brook trout, white sucker, brown bullhead and yellow perch. Crayfish are common. The lake had a history of being privately stocked with brook trout prior to its purchase by the state in 1963. Because of its accessibility and popularity as a hiking/camping destination, Cascade Lake has been the most intensively managed fishery in the Pigeon Lake Wilderness Area. Cascade Lake was reclaimed in 1963 and again in 1969 in an effort to eliminate the nonnative yellow perch population. A drop-inlet barrier dam built 0.06 miles downstream of the outlet of Cascade Lake failed to prevent reinfestation of the lake by yellow perch after both reclamations because beavers building on top of the barrier damaged its structural integrity. After the 1963 reclamation, Cascade Lake was closed to fishing for one year in an attempt to establish the wild, Honnedaga strain of brook trout. This effort failed as perch and other competing species reestablished populations, thus the pond was again reclaimed in 1969. Production brook trout were stocked after 1969, but failed to grow well when yellow perch reappeared and stocking was terminated in 1979. Brook trout captured during the 1984 ALSC survey probably originated from upstream tributaries. Cascade Lake has a maximum depth of 20 feet with scant vegetation and a predominantly rubble-gravel substrate. Chemical conditions are good, for a lake in the PLWA, with a pH of 6.45, a positive ANC, and silica values greater than 5 ppm. Cascade Lake has a flushing rate of 2.1 times/year and, though it appears to be chemically stable, should be monitored

periodically for signs of acidification. A marked trail about 1.3 miles in length branches from Big Moose Road and leads to within a short distance of the lake. There are no rare, threatened or endangered fish species in Cascade Lake. Brown bullhead (a native-but-widely-introduced (NBWI) species) and white sucker are common within other fish-bearing waters within the PLWA.

Unnamed pond B-P 5333 is a 10.1-acre, long, narrow beaver impoundment on the outlet of Cascade Lake. It would be reclaimed in conjunction with Cascade Lake to prevent reinfestation by nonnative species. The trail to Cascade Lake borders the pond beginning about 0.6 miles below the main lake. The presence of brook trout and yellow perch above and below this unnamed water strongly suggest these species are present.

Cascade Lake and Unnamed Pond P 5333 will be reclaimed and managed as Adirondack brook trout ponds to enhance and restore a native fish community. Reclamation will be conducted only if the barrier dam can be relocated to a suitable site.

Management Class: Adirondack Brook Trout

2. **Chain Ponds** (R-P 326, 327 & 328)

Lower Chain Pond (3.7 acres), Middle Chain Pond (10.1 acres), and Upper Chain Pond (6.4 acres) form an interconnected series of ponds which are headwaters for Sucker Brook and thus are tributary to Raquette Lake. All three ponds have similar chemical and physical features. Dead timber chokes their shorelines and bog vegetation is found around their inlets and outlets. Each has a pH near 4.6 with negative ANC's. No fish were captured in ALSC surveys of the three waters. High flushing rates preclude liming. Brook trout were stocked in 1929 in Upper Chain Pond and in 1957-58 in Middle and Lower Chain Ponds, but no fish were captured in subsequent netting and the policies were dropped. The original biological survey of Lower Chain Pond in 1933 reported that one brook trout had been caught in this water by an angler, but they did not net the pond. These three waters are chemically unsuitable for fish life. The Chain Ponds lie 0.25 miles due west of Queer Lake as the crow flies. There are no marked trails leading to the Chain Ponds.

The Chain Ponds will be managed to preserve their aquatic communities for their intrinsic value.

Management Class: Other

3. **Chub Lake** (B-P 778)

Chub Lake is a 46.5-acre Adirondack brook trout pond with a native fish species association. Beavers are active on its outlet and nearly 40% of its shoreline is wetland. The pond's substrate varies from organic matter to boulders. A 20 foot

barrier falls exists a short way down the outlet from the lake. Brook trout were NSA (Natural Spawning Adequate) in the first survey of Chub Lake in 1954 and pumpkinseed (NBWI) were present. Creek chubs were reported to be historically present. Biologist blamed beavers, however, for destroying much of the spawning habitat available to the brook trout (and creek chubs) by blocking the small inlet streams. Pumpkinseed and brook trout were again found in a 1960 survey and brook trout were common in a 1981 survey. In 1984, the ALSC captured only one brook trout and no pumpkinseeds. Chub Lake is apparently acidifying. The pH of Chub Lake is marginal at 5.16 and the ANC is slightly negative indicating no buffering capacity to withstand additional acidic inputs. The ALSC determined a flushing rate of 2.6 times/year for Chub Lake, placing it above the flushing rate criteria of 2.0 for liming. Chub Lake is an historically important brook trout fishery in the PLWA. Bathymetric measurements and other criteria used to determine the flushing rate should be carefully recalculated and if the flushing rate falls below 2.0, Chub Lake will be limed. Beaver control would be desirable, but ultimately impractical, to restore natural spawning conditions. Chub Lake is tributary to Constable Pond and is accessible via a 3.0 mile hike along a marked trail starting at Higby Road.

Chub Lake will be managed as an Adirondack brook trout pond to enhance and restore a native fish community.

Management Class: Adirondack Brook Trout

4. **Constable Pond** (B-P 777)

Constable Pond is a 53.6-acre Adirondack brook trout pond which is acidifying. In 1951, the first survey of this pond collected creek chub, pumpkinseed, brown bullhead (all NBWI), the nonnative yellow perch and a few brook trout. The pond was reclaimed that same year and stocked with fall fingerling brook trout. A subsequent survey in 1958 collected only brook trout. In a 1976 survey, brown bullhead and yellow perch were collected, no trout were captured, and brook trout stocking was cancelled. The 1984 ALSC survey captured only one fish, a brown bullhead, and water chemistry work determined a pH of 4.92 with a negative ANC. Constable Pond lies in the course of Constable Creek, about 1.8 miles upstream of Big Moose Lake, and has a flushing rate of 16.5 times/year. Constable Pond does not meet liming criteria and is too acidic to stock or reclaim. Access to Constable Pond is possible via a 2.0 mile hike along a marked trail from Higby Road.

Constable Pond will be managed as an Adirondack brook trout pond to preserve and protect its native fish community. Although Constable Pond no longer provides a viable fishery due to acidification, its status as an Adirondack brook trout pond should be maintained in the event that pH levels improve and brook trout can be restored to the lake.

Management Class: Adirondack Brook Trout

5. **Cranberry Pond** (R-P 319)

Cranberry Pond is a 27-acre coldwater pond which lies in the course of Sucker Brook, about 0.9 miles west of Raquette Lake. It has a high flushing rate and a considerable amount of submergent vegetation. Cranberry Pond has a nearly neutral pH of 6.67 and an ANC of 65. When first surveyed in 1933, Cranberry Pond had abundant populations of brook trout and white sucker. Also present were brown bullhead (NBWI), pumpkinseed (NBWI), common shiner, creek chub (NBWI), northern redbelly dace, blacknose dace and cutlips minnow (nonnative). Surveys in 1955 and 1979 reported the same species mix with the addition of the nonnative central mudminnow. The 1984 ALSC survey captured a third nonnative species, the golden shiner, in large numbers and netted only two brook trout. The brook trout population has been severely impacted by the high degree of interspecific competition. The recent invasion of golden shiner appears to be the "last straw" for brook trout in this water, which is unreclaimable due to its location in the middle of a large stream/wetland watershed. Older maps indicate a trail to Cranberry Pond originating at Sucker Brook Bay on Raquette Lake, but rangers report the trail is unmarked, overgrown, and unusable.

Cranberry Pond will be managed as a coldwater pond to preserve its native fish community in the presence of historically associated and nonnative species.

Management Class: Coldwater

6. **East Pond** (B-P 571)

East Pond is a 27.4-acre Adirondack brook trout pond which lies in the course of Beaver River Flow, yet has a low flushing rate of 2.1 times/year. East Pond has been relatively acidic since first surveyed in 1949 when a surface ph of 4.9 was noted. However, brook trout were caught in the 1949 survey. A 1960 survey captured no fish in East Pond, leading to cancellation of the pond's brook trout stocking policy. Clear water, scant vegetation, no fish community and a pH of 4.7 characterized this pond in a 1984 ALSC survey. Rangers report that brook trout are naturally reproducing in the outlet stream of East Pond, about 0.5 miles downstream of the pond. East Pond is remote, with no marked trail access. It lies about 1 mile away from Long Pine Point on Twitchell Lake.

East Pond will be surveyed to produce an accurate bathymetric map and recalculate it's flushing rate. If the new flushing rate falls below 2.0 and other criteria are met, the pond should be limed to enhance and restore a native fish community.

Management Class: Adirondack Brook Trout

7. **Lower Gull Lake** (B-P 758) and **Upper Gull Lake** (B-P 762)

Lower and Upper Gull Lake are not physically connected, although they are geographically close together. Both ultimately drain into Big Moose Lake and are similar in most respects. Upper Gull Lake (26 acres) and Lower Gull Lake (27 acres) were initially surveyed in 1952 and neither supported a fish population. Upper Gull Lake was resurveyed in 1958 with the same result, but an experimental brook trout stocking policy was implemented. A follow-up survey in 1960 captured a few brookies in the lake, but the policy was cancelled in 1969 after netting captured no fish. ALSC surveys in 1984 also captured no fish. Lower Gull Lake had a pH of 4.75 and a flushing rate of 3.7 in 1984, while Upper Gull Lake had a pH of 4.96 and a flushing rate of 4.4. Neither lake is suitable for liming and they may have been historically fishless.

The lakes are accessible via a 4.0 to 4.5 mile hike along the Gull Lake Trail starting at Inlet on Big Moose Lake. A leanto exists on the trail between the lakes.

Upper and Lower Gull Lake will be managed to preserve their aquatic communities for their intrinsic value.

Management Class: Other

8. **Middle Haymarsh Pond** (R-P 323) & **Upper Haymarsh Pond** (R-P 322)

Upper Haymarsh Pond is a 17.5-acre Adirondack brook trout pond which is contiguous with Lower Haymarsh Pond (R-P 321). The surface area presented here reflects their combined area. Middle Haymarsh Pond is a 3.7-acre Adirondack brook trout pond in the same watershed, but it lies 0.6 miles north of Upper Haymarsh Pond. Both waters were first surveyed by the ALSC in 1984, which captured no fish in either pond. The ponds are similar chemically and morphometrically with a pH range of 5.48-5.61, slightly positive ANC's, and an average depth of 3.3-4.3 feet. Temperature and oxygen conditions seem adequate for trout in both waters. Flushing rates are too high on either water to meet liming criteria. The Haymarsh ponds are quite remote. There are no marked trails leading to these waters which lie 4.0-4.6 miles north of Shallow Lake.

Middle and Upper Haymarsh Ponds will be managed as Adirondack brook trout ponds to preserve their native fish communities.

Management Class: Adirondack Brook Trout

9. **Jock Pond** (B-P 583)

A 6.4-acre acidic, warm pond in which no fish were captured by the ALSC in 1984 or by the DEC in 1979. Jock Pond has a pH of 4.72, a negative ANC, and a flushing rate of 6.8 times/year. Rangers describe it as "shallow, with chin-deep mud" . The pond lies NNW of North Bay on Big Moose Lake. There are no marked

trails leading to Jock Pond.

Jock Pond will be managed to preserve its aquatic community for its intrinsic value.

Management Class: Other

10. **Lilypad Pond** (B-P 587), **Unnamed Pond** (B-P 5326)

Historically, Lilypad Pond was separated into Lower and Upper Lilypad Ponds. Beaver activity has increased the surface area of Lower Lilypad Pond and it now inundates what was once known as Upper Lilypad Pond. Their combined area equals 23.2 acres. Lilypad Pond supported brook trout at the turn of the century. No fish were captured, however, in DEC surveys of 1949 and 1975, or by the ALSC in 1984. The pond has a flushing rate of 8.1 times/year, a pH of 4.68, a negative ANC, and clear, blue-green water. Lilypad Pond was reclaimed in 1955 in conjunction with the reclamation of Twitchell Lake because it is a headwater of that system. Lilypad Pond lies due east of Twitchell Lake. There is no marked trail access.

Pond B-P 5326 is a small (1.7-acre), beaver impoundment immediately upstream of Lilypad Pond. It has never been surveyed, but is thought to match Lilypad Pond in its chemical/biological characteristics.

Lilypad Pond and Unnamed Pond P 5326 will be managed as Adirondack brook trout ponds to preserve their aquatic communities for their intrinsic value. This management class is appropriate because of the historical fish community and past management practices.

Management Class: Adirondack Brook Trout

11. **Little Chief Pond** (B-P 757)

A shallow, warm, bog pond of 6.7 acres. Sphagnum bog surrounds at least 85% of its shoreline. A 1986 ALSC survey of this pond captured only three central mudminnows (a nonnative species). Little Chief Pond has one of the lowest pH's in the PLWA at 4.5 and an equally bad ANC of -24.9. Average depth of the pond is two feet and it has a high flushing rate. Little Chief Pond lies within a large wetland on the north shore of Big Moose Lake. There are no marked trails leading to this pond.

Little Chief Pond will be managed to preserve its existing fish community for its intrinsic value.

Management Class: Other

12. **Lone Pond** (R-P 331)

Lone Pond was first visited in 1933 by the original Biological Survey Unit, but the 3.5-acre pond was not netted. The investigators noted typical bog characteristics of dark brown water and a sphagnum, heath shoreline. Lilies cover Lone Pond in the summer months and a 1984 ALSC survey noted much dead timber. The pond has a pH of 4.82, an ANC of -16.8, and no known fish community. Lone Pond is the headwater of the first tributary of Stillman Brook and lies about 0.6 miles upstream of Raquette Lake. No marked trails lead to the pond.

Lone Pond will be managed to preserve its aquatic community for its intrinsic value.

Management Class: Other

13. **Mays Pond** (B-P 775)

Mays Pond is a 33.4-acre Adirondack brook trout pond that is under mixed public/private ownership. The lake was stocked with brook trout in 1945, at which time smallmouth bass were observed. A 1947 survey captured brook trout, pumpkinseed (NBWI), white sucker, brown bullhead (NBWI) and the nonnative yellow perch. A prereclamation survey in 1952 caught the same species mix along with smallmouth bass and creek chub (NBWI). With the private landowner's consent and cooperation, Mays Pond was reclaimed in 1952 and subsequently stocked with brook trout. A barrier dam was built on the lake's outlet stream to prevent reinfestation by yellow perch. The pond provided fair brook trout fishing until 1982, when stocking was cancelled because of landowner/fisherman conflicts. A 1986 ALSC survey of Mays Pond captured brown bullhead and central mudminnow (nonnative). Mays Pond has a pH of 5.19 and an ANC of -10.3, its flushing rate is 3 times/year. A 1.8 mile marked trail originating at Higby Road ends within 0.06 miles of the pond.

During the five-year scope of this plan Mays Pond will be managed as an Adirondack brook trout pond to preserve the existing native and nonnative fish community. Public access to all of Mays Pond should be a high priority for the state. Acquisition of the property if it is offered for sale or purchase of easement rights should be pursued. If full access to Mays Pond is acquired the pond should be resurveyed. Past survey history suggests reclamation and, perhaps, liming would be possible on Mays Pond.

Management Class: Adirondack Brook Trout

14. **Merriam Lake** (B-P 756)

Merriam Lake is an acidic and, apparently, an historically fishless lake with a surface area of 19.8 acres. Surveys in 1951, 1953, 1975 and 1984 captured no fish. An experimental

brook trout stocking tried in 1952 failed, as the 1953 netting attests. The lake's pH is 4.74, the ANC is -9.6, and the flushing rate is 5.9 times/year. Merriam Lake lies due north of Big Moose Lake. There are no marked trails leading to the lake.

Merriam Lake will be managed to preserve its aquatic community for its intrinsic value.

Management Class: Other

15. **Oswego Pond** (B-P 585)

Oswego Pond is a 9.1-acre Adirondack brook trout pond which was "fairly heavily" fished in the 1950's and remains a monoculture. It was first stocked in 1938. When first netted in 1949, 53 brook trout were captured. Netting success declined in subsequent surveys of 1967, 1968, and 1975. Stocking was cancelled in 1974, but trout are reproducing naturally in the pond because a 1984 ALSC survey captured one brookie. Oswego Pond is surrounded by wetlands and beavers are active on its outlet. Its pH is 5.05, the ANC is 1.2, and the flushing rate is 5.6 times/year. It is likely that gradual acidification has reduced survival of brook trout in this pond. A 1.2 mile trail from Twitchell Lake leads to the pond, but parts of the trail are privately owned. The new Norridge trail proposed in this plan will pass quite close to Oswego Pond.

Oswego Pond will be managed to preserve the native fish community for its intrinsic value.

Management Class: Adirondack Brook Trout

16. **Otter Pond** (B-P 759)

This 10.6 acre pond had never been surveyed until it was visited by the ALSC in 1984. No fish were captured by the ALSC, which recorded a pH of 4.97 and an ANC of -1.8. Otter Pond has a flushing rate of 16.5 times/year. The pond is accessible by the West Mountain Trail, but it is a 4.0 mile hike from the Sucker Bay area of Raquette Lake which includes climbing West Mountain.

Otter Pond will be managed to preserve its aquatic community for its intrinsic value.

Management Class: Other

17. **Pelchar Pond** (R-P 325)

Pelchar Pond is a 44-acre Adirondack brook trout pond which has suffered a notable decrease in fish species diversity due to acidification. The original survey of this pond in 1933 captured white sucker, brown bullhead (NBWI), creek chub (NBWI) and common shiner. The same species were noted in a 1955 survey, with the addition of pumpkinseed (NBWI). Brook trout were stocked from

1956-1964 in Pelchar Pond, but stocking was cancelled after a 1964 survey captured only one trout (along with the other species previously found). Since 1964, pond conditions have apparently degraded. The 1984 ALSC survey of Pelchar Pond captured only pumpkinseed. Thus, at least four species have disappeared, along with brook trout. Pelchar Pond has a pH of 5.05 and a slightly positive ANC of 1.8. ALSC calculations derived a flushing rate of 3 times/year for this water. A detailed bathymetric survey and recalculation of the flushing rate may lower this value to below the liming criteria of 2 times/year. Pelchar Pond is the headwater of a tributary to Shallow Lake. There are no marked trails leading to the pond.

Pelchar Pond will be managed to enhance and restore a native fish community. If a bathymetric resurvey data supports the decision, the pond will be limed and stocked with brook trout. Brown bullhead, white sucker and other native species do not need to be reintroduced to Pelchar Pond for they are common in other fish-bearing lakes within the PLWA.

Management Class: Adirondack Brook Trout

18. **Pigeon Lake** (B-P 779)

The namesake water for the Pigeon Lake Wilderness typifies the insidious effect acid precipitation has had on the aquatic ecosystems of the Adirondacks. This 44.5-acre lake once had a reputation for producing large-sized brook trout, and had been stocked with this species several times from 1932-1938. When first surveyed in 1954, brown bullhead (NBWI) and pumpkinseed (NBWI) were noted as being common. The biologist also noted that a spawning area for brook trout in the outlet area of the lake had been blocked off by a large beaver dam. A 1958 survey captured only one brook trout in the lake. Stocking was cancelled in 1975 after the pilot doing the air stocking reported that the brook trout were dying shortly after being planted. A 1976 DEC survey and 1984 ALSC survey confirm that the lake is fishless. Pigeon Lake has a pH of 4.85, an ANC of -6.6, and a flushing rate of 2.9 times/year. As with Pelchar Pond, the flushing rate for Pigeon Lake is close to the acceptable range for liming. A detailed bathymetric map will be produced and the rate recalculated. If the flushing rate falls below 2 times/year, Pigeon Lake will be limed and restored with brook trout. Pigeon Lake is remote, being an 6.0 mile hike along the West Mountain Trail from Judson Road.

Pigeon Lake will be managed as an Adirondack brook trout pond to enhance and restore a native fish community.

Management Class: Adirondack Brook Trout

19. **Pug Hole** (B-P 775a)

Pug Hole is an 11.4-acre pond located about 0.3 miles upstream of Mays Pond. A DEC survey in 1952 and an ALSC survey in 1985 captured no fish. This lily-covered pond has a pH of 4.81, an ANC of -21.2, and a flushing rate of 15.4 times/year. Pug Hole lies about 0.3 miles away from the nearest trail to Mays Pond. No marked trails lead to the pond.

Pug Hole will be managed in conjunction with Mays Pond. If full public access can be acquired on Mays Pond and a reclamation is proposed for that water in a future 5-year revision of this plan, Pug Hole would be resurveyed to confirm lack of a fish community. Depending on the status of the fish community, reclamation of Pug Hole in conjunction with a reclamation of Mays Pond would be necessary to ensure successful reestablishment of brook trout in the system.

Management Class: Adirondack Brook Trout

20. **Queer Lake** (R-P 329)

Queer Lake is an oddly-shaped, 142.1-acre, coldwater lake that has a confusing drainage pattern. Many maps indicate that Queer Lake drains toward the North Branch of the Moose River in Herkimer County and is thus part of the Black River watershed. However, ALSC field crews confirmed in 1986 that the lake drains through an outlet on it's southern shore into Sucker Brook, and is thus part of the Raquette River watershed. Biologists noted in 1933 that the lake was heavily fished for brook trout and lake trout. Both gamefish species were stocked in the 1920's, but it is likely that they are indigenous to the lake. The 1933 survey also reported white sucker, brown bullhead (NBWI), pumpkinseed (NBWI), northern redbelly dace and lake chub. Queer Lake is the only lake in the PLWA in which lake chub and lake trout have been reported. Three nonnative species commonly used as bait were also caught in 1933: fathead minnow, banded killifish, and golden shiner. Surveys in 1956, 1970 and 1976 captured the same gamefish and panfish species, but only one lake trout was captured in 1976. These surveys did not attempt to catch smaller species such as the lake chub. A 1986 ALSC survey of Queer Lake utilized a variety of gear types and captured brook trout, brown bullhead, pumpkinseed, white sucker and golden shiner. But, northern redbelly dace, lake chub and lake trout were not captured nor were the nonnative fathead minnow and banded killifish. It appears, therefore, that Queer Lake has lost fish species diversity since the 1930's, probably due to acidification. Queer Lake has a pH of 5.46, an ANC of 8.5, and a flushing rate of 0.2 times/year. A 2.45 mile marked trail leading to Queer Lake Landing begins on Higby Road.

Queer Lake will be reclaimed to eliminate nonnative golden shiner and reduce or eliminate brown bullhead and white sucker. The lake will be managed to enhance and restore a native fish

community consisting of brook trout, lake trout and lake chub. Liming will be conducted if acidity levels increase or if current levels appear to be effecting survival of the reintroduced species.

Management Class: Coldwater

21. **Russian Lake** (B-P 774)

This 37.3-acre lake is acidic and too warm to support trout in the summer months. Largemouth bass were stocked on an experimental basis in 1960 in Russian Lake. A 1962 survey captured no fish, however, and the policy was cancelled. In 1984, the only fish captured by the ALSC were a few yellow perch. A pH of 4.79 and ANC of -3.8 attest to the acidic nature of the lake. Russian Lake has a flushing rate of 2.7 times/year and has bog vegetation in some shoreline areas. A 0.75 mile trail from the end of East Bay on Big Moose Lake leads to the lake.

Russian Lake will be managed to preserve its nonnative fish community.

Management Class: Other

22. **Shallow Lake** (R-P 324)

Shallow Lake is the largest lake in the PLWA with a surface area of 267.9 acres. The lake has gamefish populations of brook trout and smallmouth bass, thus, it is both warm and coldwater fishery (two-story). Shallow Lake had a fish community consisting of brook trout, smallmouth bass (nonnative), white sucker, common shiner and pumpkinseed (NBWI) in 1933. A 1957 survey added two other nonnative species, the golden shiner and cutlips minnow, and the NBWI brown bullhead to the species list. A 1984 ALSC survey provided no new fish species information. The lake has a pH of 6.38, an ANC of 41.4, and a flushing rate of 3.2. Extensive wetlands both upstream and downstream of the lake preclude reclamation of this productive waterbody. Shallow Lake is accessible via a 2.0 mile trail beginning at the Uncas Road near Lower Brown's Tract Pond. This UMP calls for improvement of the Shallow Lake trail.

Shallow Lake will be managed as a two-story water to preserve its native fish community in the presence of nonnative species.

Management Class: Two-story

23. **Lower and Upper Sister Lakes** (B-P 768, P 769)

Upper Sister Lake (77.1 acres) and Lower Sister Lake (86.5 acres) are coldwater lakes which are connected by a channel and have similar fish communities. Both waters had NSA brook trout populations prior to the early 1950's and had reputations as good fisheries. When first surveyed in 1954, biologists noted that

recent invasion of the area by beavers had resulted in the damming of tributaries to the ponds and subsequent siltation had ruined most spawning areas. In 1954, brook trout were scarce and a stocking policy was implemented. Also caught in 1954 were pumpkinseed (NBWI), golden shiner (nonnative), white sucker and brown bullhead (NBWI). The same species were caught in a 1958 survey, but a 1970 survey revealed the establishment of an abundant yellow perch population and the near disappearance of brook trout. Consequently, the brook trout stocking policy was cancelled. The 1984 ALSC survey of these lakes found the same fish species composition as 1970. The pH in Upper and Lower Sister Lake was 4.9 in 1984 and ANC's were slightly negative. Upper Sister Lake has a flushing rate of 15.5 times/year while the lower lake has a rate of 22.2. Extensive watersheds above and below the lakes preclude reclamation. There is little chance that current management techniques can reestablish brook trout in either water. A 4.0 mile marked trail from the Inlet on Big Moose Lake leads to the outlet of Lower Sister Lake.

Upper and Lower Sister Lake will be managed as coldwater ponds to preserve their native fish communities in the presence of historically associated and nonnative species.

Management Class: Coldwater

24. **South Pond** (B-P 582)

South Pond is a 44.2-acre acidic lake that, apparently, is historically fishless. DEC surveys in 1953, 1954, 1975 and an ALSC survey in 1984 captured no fish. The 1953 survey noted that the "pond has never produced brook trout fishing". South Pond had a pH of 4.89 and an ANC of -3.8 in 1984. A flushing rate of 4.2 times/year precludes liming the lake. South Pond which lies directly east of Twitchell Lake. There are no marked trails leading to this waterbody.

South Pond will be managed to preserve its aquatic community for its intrinsic value.

Management Class: Other

25. **Terror Lake** (B-P 570)

This 68.7-acre, acidic lake is one of the most remote waters in the PLWA. Fish were not captured in the first survey of this water in 1965 nor did the ALSC capture any in 1984. Interestingly, crayfish were captured in both surveys. This is unusual for a lake with a pH of 4.78 and an ANC of -11.5. Terror Lake has a flushing rate of 9 times/year and ultimately drains into Stillwater Reservoir. It lies due north of the Gull Lakes. No marked trails lead to the lake.

Terror Lake will be managed to preserve its aquatic community for its intrinsic value.

Management Class: Other

26. **Townsend Pond** (B-P 751)

Townsend Pond is a 5.7-acre bog pond which has never been netted. Biologists who visited the pond in 1976 described it as being lily-covered, shallow (1.5 foot average depth), darkly-stained, having a good flow, and a 100% muck bottom. Shoreline conditions prevented netting the pond at that time. Rangers report that the old beaver dam on the pond has naturally breached and that the pond's surface area is now reduced to 3 acres. Townsend Pond is the headwater for tributary 19 of the North Branch Moose River. No marked trails lead to the pond.

Townsend Pond will be managed to preserve its aquatic community for its intrinsic value.

Management Class: Other

27. **Unnamed Pond** (B-P 569)

A 2.2-acre pond that was surveyed for the first time in 1984 by the ALSC. This acidic pond has no fish community, a pH of 4.65, an ANC of -20.8, and a flushing rate of 73.7 times/year. The pond appears isolated on topographic maps, but ALSC maps indicate it does have an inlet and outlet. This pond is very remote, lying 1.4 miles north of Terror Lake on the northern edge of the PLWA.

This unnamed pond will be managed to preserve its aquatic community for its intrinsic value.

Management Class: Other

28. **Unnamed Pond** (B-P 572)

This unnamed, 5.4-acre pond has never been surveyed. It lies in the course of tributary 6 of the West Branch of Beaver Creek and is probably a beaver impoundment. The pond has a Biological Survey number of P 5339. No trail leads to this unnamed water, which lies 1.6 miles northwest of Oswego Pond.

This unnamed pond will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

29. **Unnamed Pond** (B-P 760)

An 11.1-acre, acidic lake first surveyed by the ALSC in 1984. The ALSC pond number for this water is 40759. This unnamed pond has

a pH of 5.03, an ANC of 0.3, and a flushing rate of 1.3 times/year. No fish were captured in the 1984 survey. In the absence of historical data for this pond and with the awareness that acidification degraded many ponds in the PLWA from 1950-1970, it is not possible to judge whether this pond was historically fishless. The pond is relatively deep, with a maximum depth of 30 feet and an average depth of 13.8 feet. It has clear, almost colorless water and a temperature/oxygen profile suitable for trout. The pond appears to be isolated on topographic maps, but the ALSC survey indicates a small outlet stream is present. No trail leads to this pond, which lies 0.4 miles east of Lower Sister Lake.

This unnamed pond will be resurveyed to assess the aquatic macrophyte and fish communities. If bog vegetation is scarce, the pond will be limed. This is one of the few ponds in the PLWA with the chemical/physical characteristics suitable for successful liming. Restoration of a native fish community to this water would partially mitigate the heavy loss of other such communities in the PLWA.

Management Class: Adirondack Brook Trout

30. **Unnamed Ponds** (B-P 761,763,764,5290,765,766)

These six, unnamed ponds lie in the course of Andy's Creek and are merely sections of the stream widened by beaver activity. Andy's Creek drains into the Inlet of Big Moose Lake. Pond B-P 761 (5.2 acres) is the furthest downstream, being found at River Mile (RMI) 1.0 of Andy's Creek. Pond 763 (3.5 acres) is at RMI 1.2; P 764 (10.1 acres) is at RMI 2.4; P 5290 (1.7 acres) is at RMI 2.9; P 765 (6.2 acres) is at RMI 3.8; and P 766 (4 acres) is at RMI 4.0. All are surrounded by wetlands. Ponds 765 and 766 were surveyed by the ALSC in 1984. Each was very shallow with a mean depth of 2 feet and they had high flushing rates of more than 100 times/year. No fish were caught in either water. Pond 765 has a pH of 4.59 and an ANC of -20.4. Pond 766 has a pH of 4.63 and an ANC -22.9. All of these ponds must be reached via bushwacking along Andy's Creek and due to wetlands are virtually inaccessible.

These unnamed ponds will be managed to preserve the fish species present for their intrinsic value.

Management Class: Other/Unknown

31. **Unnamed Pond** (B-P 767)

This small (2.7 acre) pond has never been surveyed. It lies in the course of a tributary to the outlet stream for Lower Sister Lake. The Biological Survey pond number for this water is P 5324. Wetlands surround the pond, which is probably a beaver impoundment. The pond lies about 0.6 miles southwest of Lower Sister Lake.

This unnamed pond will be managed to protect and preserve the fish species present for their intrinsic value.

Management Class: Unknown

32. **Unnamed Ponds** (B- P 5334, 5335, 5336, 785)

These four unnamed ponds lie in the course of Eagle Creek and appear as widened sections of that creek lying in the midst of large wetland areas. They are undoubtedly beaver impoundments, but none have ever been surveyed. Eagle Creek drains into Fourth Lake of the Fulton Chain and passes through the village of Eagle Bay. The creek is roughly paralleled by the old Uncas Road and all four ponds are within a 0.6 mile bushwack of that pathway. Pond P 5334 (RMI 1.1) is 4.9 acres in size; P 5335 (RMI 1.4) is 5.4 acres; P 5336 (RMI 2.8) is 4.2 acres; and P 785 (RMI 4.6) is 3.9 acres.

These unnamed ponds will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

33. **Unnamed Ponds** (B- P 5287,5288,5289)

These three unnamed ponds lie in the course of the outlet stream for the acidic Terror Lake (B-P 570). They are merely wide areas in this stream which eventually drains into Stillwater Reservoir. Pond P 5289 (9.6 acres) lies 0.3 miles downstream of Terror Lake; P 5288 (1 acres) is 0.7 miles downstream; and P 5287 (2 acres) is 1.0 mile downstream. None have been surveyed and are probably as acidic as Terror Lake.

These unnamed ponds will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

34. **Unnamed Ponds** (B-P 5318, 5319, 5320, 5321)

These four, small unnamed ponds lie in the course of the inlet and outlet stream to East Pond (B- P 571) and may be acidic, beaver impoundments. None have been surveyed. Pond P 5318 (1.2 acres) and P 5319 (1.7 acres) are both about 1.2 miles downstream of East Pond. Pond P 5320 (4.1 acres) lies about 0.1 mile upstream of East Pond, while P 5321 (1.4 acres) is another 0.06 miles upstream. East Pond, before it acidified, supported an NSA brook trout population. It is possible that one or more of these ponds may still support fish life. Rangers report natural reproduction of brook trout in the outlet stream of East Pond. There are no trails to any of the four ponds.

These unnamed ponds will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

35. **Unnamed Ponds** (B-P 5322, 5323)

These two, small, unnamed ponds are headwaters for a tributary to Upper Gull Lake (B-P 762). Both are probably acidic, beaver impoundments devoid of fish. Neither has been surveyed. Pond P 5322 is 2.4 acres in size while P 5323 is 1.4 acres. The ponds lie about 0.6 miles northwest of Upper Gull Lake.

These unnamed ponds will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

36. **Unnamed Ponds** (B-P 5325, 5327, 5521, 5523,5524)

These five ponds lie in the watershed of tributary 1 of Andy's Creek. All appear to be beaver impoundments and most have extensive areas of wetlands surrounding them. None have been surveyed. The nature of Andy's Creek and other waters in the vicinity suggests these ponds are acidic and cannot be limed. Pond P 5325 is 5.2 acres in size; P 5327 is 6.4 acres; P 5521 is 2 acres; P 5523 is 6.9 acres; and P 5524 is 5.7 acres. Pond P 5327 and P 5524 lie to the northwest of the Haymarsh Ponds. Pond P 5325 and P 5521 are east of Lilypad Pond. P 5523 is at the headwaters of the tributary and is near Otter Pond (B-P 759).

These unnamed ponds will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

37. **Unnamed Pond** (B-P 5328)

This small (1.5-acre) pond is the headwater for tributary 4 of Constable Creek and is roughly 2.5 miles upstream of Constable Lake. It is quite remote, being 0.3 miles south of Pigeon Lake, and lies in the midst of a sizeable wetland. The pond has never been surveyed.

This unnamed pond will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

38. **Unnamed Pond** (B-P 5332)

This unnamed, 2.4-acre pond is the headwater for tributary 3 of Moss Lake (B-P 746). It has never been surveyed, but is probably a beaver impoundment. A 5- to 10-acre wetland surrounds

the pond according to the topographic map. Tributary 3 drops nearly 200 feet in elevation in its 1.0 mile course to Moss Lake from this small pond, so it is likely that there are natural barriers to fish migration. The pond lies within a mile of the Big Moose Road. No marked trails lead to this water.

This unnamed pond will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

39. **Unnamed Ponds** (B-P 5341, 5342)

These two, small, unnamed ponds are part of the West Branch Beaver Creek watershed on the western edge of the PLWA. Neither has been surveyed. Pond P 5341 is 2.4 acres in size and is the headwater for tributary 7 of the West Branch Beaver Creek. Pond P 5342 (3.4 acres) lies in the course of the main stream at RMI 1.2. The ponds are remote and lie north of Razorback Pond (not in the PLWA) and the Silver Lake Trail.

These unnamed ponds will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

40. **Unnamed Ponds** (R-P 320, 5216)

Both of these waters are tiny (0.7-1.2 acre), beaver impoundments lying in the midst of the large wetland area surrounding Sucker Brook. They have never been surveyed, but probably contain fish because Shallow Lake (R-P 324) and Cranberry Pond (R-P 319) in the same watershed are quite productive. Pond P 320 is located about 0.6 miles northeast of Shallow Lake and 0.3 miles west of Pelchar Pond (R-P 325). Pond P 5216 is located about 0.3 miles west of Shallow Lake, off tributary 4b of Sucker Brook. No marked trails lead to these ponds.

These unnamed ponds will be managed to preserve the fish species present for their intrinsic value.

Management Class: Unknown

41. **Unnamed Pond** (R-P 330)

This 10.4-acre pond is the headwater to tributary 1 of Queer Lake. The pond was surveyed in 1984 by the ALSC and was found to be fishless and acidic. It has a pH of 4.91, an ANC of -4, and a flushing rate of 6.7 times/year. No marked trails lead to this unnamed pond which lies 1.4 miles northeast of Queer Lake.

This unnamed pond will be managed as an Adirondack brook trout pond to preserve the fish community in the Queer Lake watershed. Reclamation of this pond will be necessary to ensure successful restoration of a native fish community to Queer Lake.

Management Class: Adirondack Brook Trout

42. **Unnamed Pond** (R-P 5062)

Pond R-P 5052 is the largest pond (18.5 acres) lacking survey data in the PLWA. Topographic maps indicate it has at least four small islands with a minimal amount of wetland surrounding the pond. The pond is a headwater for tributary 5 of Brandreth Lake Outlet, which has a brook trout population. One of the most remote of PLWA waters, this pond is located 2.0 miles north of West Mountain and 1.6 miles south of Brandreth Lake. No marked trails lead to P 5052.

This unnamed pond will be surveyed to determine the fish species present.

Management Class: Unknown

43. **Upper Brown's Tract Pond** (R-P 317)

Upper Brown's Tract Pond is the only warmwater pond in the Pigeon Lake Wilderness. This 48.9-acre water was first surveyed by the original Biological Survey Unit in 1933. Smallmouth bass (nonnative), yellow perch (nonnative), pumpkinseed (NBWI), brown bullhead (NBWI) and white sucker were captured. A 1957 survey reported golden shiner (nonnative) in addition to the other species. In 1984, the ALSC added largemouth bass (nonnative) and common shiner (native) to the fish species list for this lake. The lake has a pH of 7.22, an ANC of 132.9, and a flushing rate of 9 times/year. A wide channel to Lower Brown's Tract Pond (not in the PLWA) and extensive wetlands upstream of the lake preclude reclamation. The Uncas Road provides direct access to the lake. A state campground on Lower Brown's Tract Pond and the proximity of this lake to Raquette Lake village make this water one of the most heavily fished in the PLWA.

Upper Brown's Tract Pond will managed as a warmwater pond to preserve its native fish community in the presence nonnative species.

Management Class: Warmwater

44. **Windfall Pond** (B-P 750a)

Windfall Pond (5.9 acres) has historically supported an NSA brook trout population. A genetically unique strain of brook trout may exist in the pond (Keller, 1979). This strain may now be threatened by interspecific competition and/or unauthorized stocking. A 1975 survey of Windfall Pond reported that brook

trout were NSA and that white sucker were present. A 1982 survey captured the same two species. In a 1985 ALSC survey, however, only one brookie was captured along with many white suckers, northern redbelly dace, blacknose dace and creek chubs. A 1990 survey utilizing experimental gillnets captured six brook trout and eight white sucker. Cyprinids were not effectively sampled in 1990. Windfall Pond had a pH of 7.23, an ANC of 149.2, and a flushing rate of 4.3 times/year in the 1985 ALSC survey. The 1990 survey recorded a surface pH of 6.57. A 2.5 mile marked trail from Big Moose Road provides access to the pond.

Windfall Pond will be managed as an Adirondack brook trout pond to protect and preserve its native fish community. The lake will be periodically surveyed and the status of its brook trout population assessed. Reclamation and efforts to reintroduce a heritage strain of brook trout may have to be undertaken if the native population continues to decline. There are currently unsubstantiated rumors that Windfall Pond has been stocked by private individuals (Forest Ranger Doug Riedman, personal communication). Evidence of such an activity would disqualify the brook trout in this pond as a heritage strain.

Management Class: Adirondack Brook Trout

Note: For purposes of this plan, only waters officially recognized (those with P numbers) by the NYS Biological Survey are included. The Pigeon Lake Wilderness contains at least 16 small (less than 1 acre), wetland/beaver ponds which have not been assigned P numbers. In some years these pond/wetland complexes may be a nearly dry wetland, while during some wet years or during years when beaver are active they contain a small impoundment. These pond/wetlands will be managed to preserve and protect the existing fish communities for their intrinsic value. Only marked trails are referred to in the pond narrative. Many ponds can be accessed by unofficial "herd paths".

2. Wildlife

The Bureau of Wildlife has divided New York into Deer Management Units (DMU's) and Wildlife Management Units (WMU's) to better manage big game, small game and furbearers on an ecological zone basis rather than by political boundaries. DMU's and WMU's contain similar land forms, human use patterns, plants and animals throughout the area. Each DMU and WMU is separate and distinct from another DMU or WMU. Big game, small game, and furbearer hunting and trapping seasons and/or quotas are set on the basis of wildlife populations within each DMU or WMU. New York is also divided into the Northern Zone, Southern Zone, and five waterfowl management zones; legally defined geographical areas which are also used for setting hunting seasons for big game and waterfowl respectively.

In addition to being located within the northern New York Towns of Inlet and Long Lake in Hamilton County and the Town of Webb in Herkimer County, the Pigeon Lake Wilderness Area also falls within the Northern Zone, Deer Management Unit 28, Wildlife Management Unit 24, and the Northeast Waterfowl Zone, all of which are used for the purpose of establishing various big game, small game, furbearer and waterfowl hunting and/or trapping seasons and quotas. While no specific wildlife management programs, information needs, or problems specific to just the Pigeon Lake Wilderness Area have been identified at this time, Bureau of Wildlife programs and actions related to the various management zones and units within northern New York that encompass the Pigeon Lake Wilderness Area and which affect or include the wildlife resources and users of the PLWA are as follows:

a. Status surveys and periodic monitoring for selected endangered, threatened, or species of special concern will continue. Currently, this includes annual surveys for eagles, ospreys, and peregrine falcons. In addition, reported sitings of various wildlife species, particularly endangered, threatened, or species of special concern, will be encouraged, recorded and verified if possible.

b. Bureau of Wildlife staff will continue to identify and map unique, critical and significant wildlife habitats including wetlands and deer wintering areas.

c. Assistance will be provided to the Adirondack Park Agency as needed in preparing, updating, and amending freshwater wetland maps for Hamilton and Herkimer Counties.

d. Bureau of Wildlife staff will continue to annually recommend big game, small game, waterfowl hunting and furbearer trapping seasons and regulations in Deer Management Unit 28, Wildlife Management Unit 24, and the Northeast Waterfowl Zone, all of which encompass the PLWA. For example, furbearer populations will be managed by adjusting the length of the trapping seasons. Deer hunting opportunities and changes will continue to be explored with the public through the public participation process.

e. Beaver, fisher, otter, bobcat, marten, and coyote harvest will continue to be monitored by pelt tagging those species removed by hunting and trapping from Wildlife Management Unit 24 which includes the PLWA and the Towns of Inlet and Long Lake in Hamilton County and the Town of Webb in Herkimer County.

f. As with selected furbearer species, deer and black bear harvests will continue to be monitored by collecting biological information from

deer and bear taken in the Towns of Inlet and Long Lake, Hamilton County, and the Town of Webb, Herkimer County, which fall within Deer Management Unit 28.

g. While the reestablishment of extirpated species is not being considered for the Pigeon Lake Wilderness Area specifically, the Bureau of Wildlife is in the process of exploring the feasibility of establishing and maintaining a moose population in northern New York, which may include the PLWA, at a level which will provide maximum opportunity for enjoyment without creating an unreasonable risk to human safety or property. The Draft Environmental Impact Statement is complete and the summer of 1992 will be spent soliciting public comment and recommendations from throughout the state.

h. As part of the Bureau of Wildlife's continuing and expanding commitment to watchable wildlife programs and opportunities, interesting communities of flora and fauna that will enhance the public's enjoyment of the wildlife resources will be identified and, dependent upon their ability to withstand increased human use, publicized. Two such potential candidates are Ferd's Bog with its associated wetlands along Eagle Creek and the marsh environment in the bay known as The Inlet on Big Moose Lake. Other opportunities might include loon watching on Stillwater Reservoir.

E. Wild, Scenic and Recreational Rivers

There are no water courses in this unit classified under the provisions of the Wild, Scenic and Recreational River System Act, Title 15 of the Environmental Conservation Law.

F. Fire Management

The DEC has the responsibility, under provisions of Article 9 of the Environmental Conservation Law, of maintaining a fire protection system for this area. The policy of the DEC is to extinguish all fires regardless of cause, land classification or ownership.

This unit contains parts of three forest ranger districts. The Stillwater and Old Forge districts, assigned to the Herkimer office, are responsible for those portions of the area accessible from Herkimer County, while the Raquette Lake district has responsibility for those portions accessible from Hamilton County. An internal agreement (see Appendix 17) describes these areas of responsibility.

Use of motorized equipment in the suppression of forest fires may be permitted in this unit. The decision to use such equipment will be the prerogative of appropriate fire management personnel and will conform with the constraints and guidelines of the Adirondack State Land Master Plan.

G. Administration

1. Lands and Forests

This wilderness area is located in two DEC regions, each of which has administrative responsibilities for that portion of the unit under its jurisdiction. Jurisdictional lines have deviated from the formal county line arrangement to areas of responsibility based on access. An

internal agreement between the Northville and Herkimer sub-offices specifically describes the areas of responsibility (see Appendix 17).

It is essential that the administrative activities of each region, as they pertain to this unit, be coordinated to assure the area is managed as a single unit rather than being split by regional, district or divisional lines. All land use activities which are proposed or occur in this area should be cleared through the area manager. This coordination will be the responsibility of the associate forester assigned to the Herkimer office. Projects contemplated by the Divisions of Lands and Forests, Operations, and Fish and Wildlife, or any other arm of the Department, will be prioritized and completed as a team effort. Specific administrative activities such as budgeting, maintenance, fire suppression, and public use controls will remain the responsibility of the respective regions.

a. Staffing

The three forest ranger districts that contain portions of this unit are the Raquette Lake district of Region 5 and the Old Forge and Stillwater districts of Region 6. The forest rangers in these districts are vital field staff needed to control public use, provide fire management and search and rescue activities, and to monitor environmental impacts. It is essential that these positions be maintained to provide necessary services.

Annual funding for an assistant forest ranger position will be requested to serve exclusively in the Pigeon Lake Wilderness. The position also will be assigned first level trail maintenance responsibilities to assist the Division of Operations in this activity.

Existing Division of Lands and Forests staffing of associate foresters and forest ranger I's is adequate to handle the administration of this unit. Seasonal Division of Operations staffing needs to be increased to properly maintain the existing facilities and those proposed in this plan.

b. Budgeting

The Northville and Herkimer offices will collaborate on the budget for the Pigeon Lake Wilderness Area. Administrative budgeting will be done by the Division of Lands and Forests in consultation with the Divisions of Fish and Wildlife and Operations. Construction and maintenance budgets will be developed by the Division of Operations in consultation with Lands and Forests and Fish and Wildlife. All budget requests, however, will be processed through the proper regional office.

c. Education

Upon final adoption of the plan, the DEC will develop a brochure and map for the Pigeon Lake Wilderness Area. The brochure will provide a brief narrative of the area's history, natural resources, available facilities, along with pertinent rules and regulations and guidelines for the use of forest preserve lands. The forest rangers will remain an important communication and education link with the public. In addition, the assistant forest ranger program will be utilized to educate the user public regarding the wilderness ethic and low-impact camping.

2. Fish and Wildlife

a. Fisheries

Administration and fisheries management of most PLWA waters is split along DEC Regional boundaries. However, the proposed reclamation of the Cascade Lake watershed will involve cooperation between Regions 5 and 6. The fish barrier dam required to prevent reinfestation of the watershed by nonnative species may be located outside of the Pigeon Lake Wilderness in the vicinity of Moss Lake.

Operation of mechanically propelled vehicles (including boats) is prohibited in the PLWA except in case of an emergency. This administrative action preserve the wilderness setting.

b. Wildlife

The Pigeon Lake Wilderness is located in two administrative DEC regions, Region 5 headquartered in Ray Brook and Region 6 headquartered in Watertown. Wildlife activities in each region are under the direct supervision of the respective Regional Wildlife Manager who is responsible for the overall direction, administration, budgeting, work plan development and prioritizing of activities in six major program areas (Environmental Protection, Environmental Management, Species Management, Public Use, Extension Services, and Administration) within his respective region. Program implementation and daily activities are performed by professional, technical, and seasonal staff under the supervision of the Regional Wildlife Manager.

Administration of the wildlife program varies depending on the specific activity, the location of the activity, and whether or not it involves a shared DMU or WMU that overlaps Regional boundaries.

In some instances, management is a shared responsibility coordinated between managers as is the case with deer management programs and recommendations for DMU 28. In other instances, a region is assigned or, by mutual agreement , assumes the lead responsibility for a specific DMU or WMU irrespective of regional boundaries. Region 5 has been assigned the lead responsibility (with input from Region 6 staff and manager) for beaver season recommendations in WMU 24 which includes the wilderness area. Region 6 has been assigned the lead responsibility for waterfowl seasons in the Northeast Zone whereas Region 5 has taken the lead in planning and conducting annual osprey and eagle surveys (with assistance from Region 6) in the Adirondack Park portions of both regions. Day to day activities involving such things as nuisance wildlife complaints, investigating wildlife mortalities or unusual sightings, reviewing major projects likely to impact wildlife habitats and populations are handled by the appropriate Regional wildlife staff and manager within their own respective Region. No specific wildlife management programs are targeted to the Pigeon Lakes Wilderness Area at this time.

H. Problem Areas

1. Accessibility

The Pigeon Lake Wilderness Area is easily accessible to the public from the south, southeast, and southwest, but to a lesser extent from the west and north because of posted private lands. The proposed trailhead improvements and parking areas listed in this plan will provide all the good, safe access necessary for the proper public use of this unit.

2. Trespass

Trespass is not considered a problem within the wilderness area. Patrol and boundary line maintenance by the forest rangers have kept this issue in check.

3. Land Titles

There are no known land title problems within the area classified as wilderness. Title to some parcels within Township 40, Totten and Crossfield's Purchase is clouded, but none of the questionable parcels are located in this unit.

4. Environmental Problems

a. Acid Rain

At the present time, the phenomena of acid ion deposition, popularly known as "acid rain", and species introductions represent the greatest threats to the fishery resources in the PLWA. Discussion of acid rain is amplified in the following paragraphs because of its impact in the PLWA. Species introductions are discussed in Section II.A.2.c. of this plan and in the Pharaoh Lake UMP.

Sulphur and nitrogen oxides represent the major acidic precursors and, in the northeast, are primarily discharged from fossil fuel burning, the smelting of sulfide ores, and automotive emissions. These pollutants are transported great distances in the atmosphere and converted to mineral acids, sulfuric and nitric, which either fall to the earth in precipitation or dry form. Portions of the Adirondack region comprise one of the largest lake districts sensitive to acid rain in the eastern United States. A recent update of Adirondack ponded water acidity status reveals that some 352

lakes, representing 24 percent of a 1,469 study lake subsample, have demonstrated "critical" summer surface pH readings below 5.0. In all of these waters, there has been a complete elimination or a marked reduction in aquatic communities (Kretser et. al., 1989). Similar studies in small PLWA streams indicate even greater losses, because none of the streams registering a low pH were found to contain native cyprinids or reproducing brook trout populations (Schofield and Driscoll 1987).

Pigeon Lake Wilderness Area waters have been greatly impacted by acid precipitation due to the area's location on the western side of the Adirondacks and its high elevation. Acidification effects related to atmospheric pollution have exerted great negative impact on former Adirondack brook trout ponds. This is not because brook trout are particularly sensitive, but rather because they are frequently the only fish species resident in many vulnerable, small, high elevation habitats.

Table 2 presents chemistry data collected from 1984-1986 for 37 Pigeon Lake Wilderness waters studied by the ALSC. The following chart summarizes the current status of area waters:

	NUMBER LAKES	AREA (acres)	STATUS	pH RANGE
	24	617	Acid Critical	less than 5.00
	8	307	Acid Endangered	5.00-6.00
	5	450	Acid Satisfactory	6.00 and greater
	34	146	Unknown	---
TOTAL	71	1520		

DEC has adopted a lake acidification classification system which considers waters exhibiting a summer surface pH above 6.0 as being in a "satisfactory" condition, those between 5.0 and 6.0 as "endangered"

and those below 5.0 as "critical". While this classification system has some limitations, it provides a reasonable index of acidification consistent with observed fish distribution.

Within the PLWA, the predominant lake status by acreage is acid critical (41 percent) and an additional 20 percent of the total water surface are is acid endangered. In the Adirondacks as a whole, 24 percent of ALSC waters were acid critical and 18 percent were acid endangered (Kretser et. al, 1989). Thus, the Pigeon Lake Wilderness has been impacted by acid precipitation to a greater extent than most areas in the Adirondacks.

Of the 32 lakes in the PLWA that are known to be acid endangered or acid critical, 22 are devoid of fish life, and undoubtedly fish species diversity in other lakes has been reduced.

In October 1990, the DEC published its "Final Generic Environmental Impact Statement on the New York State Department of Environmental Conservation Program of Liming Selected Acidified Waters" (FGEIS). The FGEIS presents policy guidelines and selection criteria for candidate liming waters along with an extensive section on the impacts of acidic precipitation on aquatic ecosystems. The guidelines state that DEC recognizes that restoration of natural aquatic ecosystems is an acceptable reason for conducting liming. Candidate waters will be carefully selected and treatment plans must be addressed in a unit management plan. Selection criteria for a liming candidate are:

a. Summer surface pH must be less than 5.7 or acid neutralizing capacity (ANC) must be 20 ueq/l or less.

b. Sphagnum moss must not occupy more than 50 percent of the shoreline.

c. Summer surface water color must not exceed 75 platinum cobalt units.

d. Flushing rate must not exceed two times per year.

e. Dissolved oxygen and temperature must be suitable for the fish species being managed.

f. A serious decline in a unique or historically excellent fishery can be shown; or

A heritage strain broodstock or threatened or endangered fish species are present and maintenance liming is required; or

Serious degradation of an aquatic ecosystem can be shown and restoration of the ecosystem is the primary objective.

Exceptions to the selection criteria are permitted on a case-by-case approval basis by the regional fisheries manager and then by the chief of the Bureau of Fisheries. Detailed justification is required for any exception.

Liming is proposed for six waters in the Pigeon Lake Wilderness Area. Section IV.D. provides justification for these limings and individual pond narratives provide pond-specific information.

The effect of lake acidification on common loon for aging and reproduction was examined on 24 lakes in the Adirondack Park (Parker, 1985). Loons seem to be able to adapt, at least in the short term, to food resource depletion attributable to increased water acidity. While fish species comprise up to 80 percent of the loon's diet, a variety of other prey types are also utilized (Palmer, 1962). The negative effects of acidification on these alternate food sources (amphibians, macroinvertebrates, etc.) has been documented. Crayfish, snails, and other species with high calcium demands are among the earliest species to disappear (Loucks, 1980). Acidification is also known to limit reproduction of salamanders and frogs

(Pough, 1976; Saber and Dunson, 1978). A decrease in pH has been shown to impede or eliminate reproduction of freshwater fishes in Canada (Beamish, 1976). Without sufficient recruitment, the population of fishes in affected waters can only decrease. Lakes and ponds which currently support loon populations may not be able to support loons in five years when many of the fish have died, been consumed, or grown too large to serve as suitable prey.

Three lakes within the Pigeon Lake Wilderness Area (Cascade, Chub and Queer Lakes) were examined in 1983 and 1984. Chub Lake was visited in 1984 with gill netting efforts yielding only two trout. Minnow traps caught numerous crayfish along with tadpoles. In this waterbody with a limited fish population, the ability of loons to forage on a variety of other species seems to help them withstand habitat and prey resource degradation due to acid precipitation. However, they may not be able to cope with acidification on a long-term basis.

b. Chemical Contamination

A study of the levels of DDT discovered in some area waters resulted in a paper entitled Investigation of Elevated DDT Levels In Stream Sediments In the Adirondack Mountains of New York - 1985 Update, by DEC Pesticide Specialist John Wainwright. The results from this paper and subsequent sampling are summarized as follows:

History

In 1982, the DEC Bureau of Environmental Protection collected sediment samples from 10 streams within the Moose River drainage basin in an effort to determine the levels of the persistent and

bioaccumulative insecticide Dichloro-Diphenyl-Trichloroethane (DDT) which had been banned from use since 1965. Although DDT is known to last in the environment for more than 25 years, it usually is reduced to its metabolites DDD and DDE relatively quickly. Since the amounts of DDT that were found were greater than these metabolites, a recent introduction into these streams seemed likely.

In an attempt to determine how and where DDT was entering the ecological system, stream sediment sampling began for the watersheds within the Fulton Chain of Lakes. Laboratory analysis was used to identify tributaries containing significant levels of DDT.

This ongoing investigation was initiated in 1984. Since then, a total of nearly 200 sediment samples have been taken from 41 streams. Three of the streams found to contain significant levels of DDT are located within or adjacent to the Pigeon Lake Wilderness Area. They include Eagle Creek, Cascade Lake Outlet, and Constable Creek.

Eagle Creek

In 1985, sediment samples were collected throughout this watershed. Within the unit samples were collected approximately three miles upstream of the wilderness boundary at Eagle Creek. These samples were taken near the first significant tributary to Eagle Creek above the Big Moose Road and showed very low DDT levels of one ppb (parts per billion) or less.

Cascade Lake Outlet

In 1984, a sediment sample was collected from Cascade Lake outlet just upstream from the Big Moose Road that contained 12.8 ppb DDT, 4.0 ppb DDD, and 2.6 ppb DDE. This prompted additional upstream work in 1985 with sample results very similar to the 1984 amount - 10 ppb

DDT. At the lake outlet, no DDT was detected, but 200 yards downstream 13.7 ppb of this contaminant was found. The other metabolites were not detected.

In 1986, 10 ppb of DDT was found at the Big Moose Road site with only .9 ppb recorded near the lake. A soil sample collected from an old dump area adjacent to this stream and approximately 200 yards downstream of the lake produced 53 ppb of DDT. Stream sediment a short distance downstream had eight ppb of DDT.

In 1987, three samples were taken. The highest level of 90 ppb DDT was found at the old dump site. Upstream from this area, only one ppb was detected while just downstream, 13 ppb of DDT was found.

The evidence gathered during the four years of sampling suggest that a small amount of DDT is probably entering this stream from the old dump site. Additional soil samples were collected within the dump area in 1988.

May's Pond Outlet (Constable Creek)

Constable Creek was found to contain 11.8 ppb of DDT, 39.5 ppb DDD, 11.0 ppb DDE during the 1982 fall sampling.

In 1984, samples were taken from Big Chief Pond Outlet, May's Pond Outlet and from Constable Creek upstream from the confluences of these two streams. The only sample producing measurable levels of DDT (1,130 ppb) was from May's Pond Outlet.

Subsequent sampling supports the theory that an introduction of DDT had been made to May's Pond Outlet between Constable Creek and May's Pond prior to 1984. The bulk of this contaminant is most likely within the slow moving segment of this beaver meadow.

In 1988, core sediment samples were collected from this area in an attempt to find DDT levels at various sediment depths. The analytical results are not available at this time.

Summary

Water and sediment samping is continuing. It might be necessary in some cases, for the Bureau of Pesticides to request assistance from the Division of Fish and Wildlife regarding contamination levels of fish and wildlife in unit waters.

c. Military Aircraft Training Activities

The United States Air Force has designated a large portion of the western Adirondacks including this wilderness area as a Military Operating Area for tactical training purposes. The unit is also in the path of two training approaches to Fort Drum. The training activities include frequent low level flights by military jet aircraft.

The roar of these airplanes as they suddenly appear out of nowhere, flying at what appears to be tree top level, can shatter the peace and tranquility of the wilderness. The noise intrusion is subjective in nature in that its impact will vary with the individual's feelings and philosophies regarding wilderness, national defense, etc.

Military overflights in the Adirondack Park are currently under study by DEC, APA, and the military.

I. Land Acquisition

The acquisition of a parcel of land at the end of Higby Road on which a parking area large enough to accommodate 10 automobiles is a very high priority project (see Higby Road Trailhead, Section IV-A-2-b).

Several other parcels of private land should also be acquired as soon as possible. These parcels are located on the perimeter of the area and would consolidate State ownership in the vicinity of Big Moose Lake. They are:

1. The Hermitage property;
2. Edward Dunn property adjacent to the Inlet;
3. Mays Pond property owned by the Sweet family.

These private holdings are not known to be on the market at this time. Should they become available in the future, every effort will be made to acquire them.

J. Adirondack State Land Master Plan Amendments Recommended

None

K. State Environmental Quality Review Act Requirements

Appendix 14 contains a Negative Declaration.

L. Relationship of Management Area to Adjacent Forest Preserve and Adjacent Area

1. Inlet

The Inlet is a marsh-like appendage at the northern end of Big Moose Lake. Since it shares almost two miles of shoreline with the Pigeon Lake Wilderness Area and two marked trails originate along this shoreline, public use can impact both areas. While the Inlet itself is not considered part of the wilderness, it is appropriate to discuss it in this plan.

A relatively narrow channel, varying from 100 to 200 feet wide, connects the main body of the Inlet, with Big Moose Lake. What appears to be an old stream channel, 8 to 10 feet deep, meanders through the open water surrounded by a shallower area three feet or less in depth.

Marsh plants such as sedges, rushes, pickerel weed, spatterdock, and water lilies flourish. Deer are commonly sighted, as well as otter, mink, muskrat and beaver. Ducks, grebes, herons, warblers and various shore birds are often present. Osprey and hawks nesting in nearby areas can often be seen overhead.

In this serene setting, a conflict has developed concerning the use of motor boats. Many people, resident and visitor alike, travel to the Inlet to enjoy its natural beauty and solitude and the opportunity to enjoy wildlife in its natural habitat. Some feel, due to its fragile ecosystem and pristine qualities, that all motorized use should be prohibited in the area. Others feel that proper use of motors does not adversely effect the resource and provides the only safe means of crossing the often rough waters of Big Moose Lake to gain access to the Inlet. Both groups agree that excessive speed and straying from the main channel are undesirable and should be controlled.

Legal questions about the riparian rights of adjoining landowners and the long history of motorized use, compounded with the fact that the area lies in two towns and two counties, indicates that the most practical solution to the problem would be voluntary self-regulation. This could be accomplished by a locally organized educational program stressing the fragile ecology of the area and its intrinsic values and by urging voluntary compliance with suggested speed limits and use regulations.

The Department could assist in this activity by monitoring the area to detect any adverse impacts on the environment of the area and in developing a descriptive pamphlet of the area for public distribution.

2. Fulton Chain Wild Forest

This unit is located on the northwest side of the Pigeon Lake Wilderness Area. The proposed snowmobile and hiking trails discussed previously in section IV-A require that the management of these two units be integrated. Limited motorized use is permitted in portions of the Fulton Chain Wild Forest in accordance with Adirondack State Land Master Plan guidelines.

3. Brown Tract Pond Campground

This 90-campsite facility is located two miles northwest of Raquette Lake Village. Access is provided from the campground to Lower Brown Tract Pond and the Shallow Lake hiking trail.

4. Stillwater Reservoir

Increased overnight public use has led to the designation of 46 primitive tent sites along the shoreline of Stillwater Reservoir. None of these sites are within the Pigeon Lake Wilderness Area. The reservoir can provide public access to the northwest portion of the wilderness area.

5. Remsen to Lake Placid Rail Corridor

This 118 mile corridor was acquired by the New York State Department of Transportation in 1975 to preserve the route through the heart of the Adirondack Region. In 1977, the corridor was leased to the Adirondack Railway Corporation for the purpose of re-establishing rail service. That venture failed and the lease became the subject of a protracted

lawsuit. In 1991, a settlement was reached reverting full control of the property to the Department of Transportation.

Currently, a public planning effort to establish the future use of the Remsen-Lake Placid Corridor has been assigned as a cooperative effort to the New York State Departments of Transportation and Environmental Conservation. Completion of the plan is expected in 1993.

6. Additional State Lands

The Pigeon Lake Wilderness Area is located adjacent to two additional wild forest areas. The rail corridor separates the wilderness area from Independence River Wild Forest to the west. The Uncas Road to the south is the dividing line between portions of the Moose River Plains Wild Forest and Pigeon Lake Wilderness.

V. SCHEDULE FOR IMPLEMENTATION

YEAR	ACTIVITY	AMOUNT	COST
I	1. Grant approval to the Town of Webb for construction of the snowmobile/horse trail		-0-
	2. Construct Cascade Lake parking facility and 1/4 mile trail	12 car	$7,200
	3. Construct Shallow Lake Trail	2 mi.	$3,500
	4. Install pit privies, Cascade Lake	2	$ 500
	5. Construct Razorback-Norridge Trail and install registers	2 mi.	$4,000
	6. Facilities Maintenance (major)*		$5,000
	7. Assistant Forest Ranger Staff one position, 20 weeks	1	$6,300
	8. Conduct biological survey of Windfall Pond to assess native brook trout		$1,200
	TOTAL		$27,700
II	1. Construct Ferd's Bog parking facility	3 car	$2,500
	2. Construct Ferd's Bog trail and install register booth (includes 500' boardwalk)	.5 mi.	$11,500
	3. Install trail registers (Russian, Sisters and Gull)	3	$ 300
	4. Facilities Maintenance (minor)**		$2,000
	5. Assistant Forest Ranger Staff one position, 20 weeks	1	$6,600
	6. Construct barrier dam for Queer Lake, if necessary		$5,000
	7. Construct barrier dam for Cascade Lake watershed		$5,000
	8. Reclaim Queer Lake		$140,000
	9. Prepare area map and educational brochure		$ 1,000
	TOTAL		$173,900

*Facilities Maintenance (major) includes blowdown removal, dry tread repair, etc., and may require use of motorized equipment. Use of motorized equipment will be scheduled for off peak season use as much as possible and appropriate logs of such use will be kept.

**Facilities Maintenance (minor) includes limited brushing, marking and maintenance of facilities to assure user safety.

YEAR	ACTIVITY	AMOUNT	COST
III	1. Facilities Maintenance (minor)		$2,000
	2. Assistant Forest Ranger one position, 20 weeks	1	$6,900
	3. Reclaim Cascade Lake watershed		$40,000
	4. Bathymetric surveys for Unnamed Pond B-P760, Pelchar Pond, Pigeon Lake, East Pond, Chub Lake		$2,000
	TOTAL		$50,900
IV	1. Construct parking facility, Higby Road*	10 car	$6,000
	2. Install trail register, West Mt. trail, Raquette Lake	1	$ 200
	3. Facilities Maintenance (major)		$5,000
	4. Assistant Forest Ranger one position, 20 weeks	1	$7,300
	TOTAL		$18,500

*The Higby parking facility is dependent on acquisition of suitable property.

YEAR	ACTIVITY	AMOUNT	COST
V	1. Facilities Maintenance (minor)		$2,000
	2. Assistant Forest Ranger one position, 20 weeks	1	$7,700
	3. Biological survey of Windfall Pond to check native strain brook trout		$1,200
	TOTAL		$10,900

Additional activities that may occur during the five year life of this plan without exact years for implementation:

ACTIVITY	AMOUNT	COST
1. Liming of one or more ponds with suitable criteria	1-5	$1,000-$14,000
2. Lime Queer Lake if acidity levels are preventing successful reintroduction of native species	1	$12,000

PRIMARY REFERENCES

Adirondack Lakes Survey Corporation (ALSC), Annual Reports 1984-1987, Ray Brook, New York, 1988.

Adirondack Park Agency, Adirondack Park State Land Master Plan, Ray Brook, New York, editions of 1972, 1979, and 1987.

Beamish, R. J., Acidification of Lakes in Canada by Acid Precipitation and the Resulting Effects on Fishes, Water, Air, Soil Pollut. 6:501-514, 1976.

Beehler, Bruce, Birdlife of the Adirondack Park, Adirondack Mountain Club, Glens Falls, New York, 1978.

Biogeochemistry 3:63-85, Martinus Nijhoff/Dr. W. Junk Publishers, Dordrecht, Printed in the Netherlands.

Bishop, Sherman C., The Salamanders of New York, New York State Museum Bulletin Number 324, 1941.

Bradbury, A., Rotenone and Trout Stocking: A Literature Review With Special Reference to Washington Department of Game's Lake Rehabilitation Program, Washington Department Game, Fish Management Division 86-2, 181 pp, 1986.

Brown, T. L., The 1973 New York Statewide Angler Survey, Cornell University, Ithaca, New York, 124 pages, Unpublished manuscript, 1975.

Bull, John, Birds of New York State, Doubleday/Natural History Press, Garden City, New York, 1974.

Burt, William H. and Grossenbeider, Richard P., A Field Guide to the Mammals, Houghton Mifflin Company, Boston, 1964.

Carleton, Geoffrey, Birds of Essex County, New York, High Peaks Audubon Society, Inc., New York, 1980.

Cline, M. G., and Marshall, R. L., Soils of New York Landscapes, Cornell University, Ithaca, New York, 1977.

Colquhoun, J., W. Kretser, and M. Pfeiffer, Acidity Status Update of Lakes and Streams in New York State, NYSDEC Special Publication, 1984.

Conant, Roger, A Field Guide to Reptiles and Amphibians, Houghton Mifflin Company, Boston, 1975.

Engstrom-Heg, Robert, A Philosophy of Trout Stream Management in New York, 1979.

Gallagher, J., and J. Baker, Current Status of Fish Communities in Adirondack Lakes, Pages 3-11 to 3-48 In: Adirondack Lakes Survey: An Interpretive Analysis of Fish Communities and Water Chemistry, Adirondack Lakes Survey Corporation, Ray Brook, NY, 1990.

George, Carl J., The Fishes of the Adirondack Park, NYS DEC, Albany, New York, Bulletin FW-P171, 1980.

Greeley, Jr., R., Fishes of the Raquette Watershed with Annotated List, p. 53-108. In A Biological Survey of the Raquette Watershed, Suppl. 23rd Annual Rep., NY Cons. Dept., 1933, 1934.

Greeley, J. R. and S. C. Bishop, Fishes of the Area with Annotated List, p. 54-92. In A Biological Survey of the Oswegatchie and Black River Systems Suppl. 21st Annual Rep., NY Cons. Dept., 1931., 1934.

Hamilton, W. J., NYSDEC Informational Leaflet on Moles and Shrews of New York, Volume 13, Number 4. New York State Conservationist, 1959.

Harper, Francis, Notes on Mammals of the Adirondacks, New York State Museum Handbook 8, 1929.

Hendee, John C., G. H. Stankey and R. C. Lucas, Wilderness Management, US Forest Service, 1978.

Hynes, H. B. N., The Ecology of Running Waters, University of Toronto Press, 555 pp., 1972.

Kay, David, The Adirondack Land Market: The Land, Its Value, Its Buyers (1968-1983), Department of Agricultural Economics, Cornell University, 1985.

Keller, Walter T., Management of Wild and Hybrid Brook Trout in New York Lakes, Ponds and Coastal Streams, NYS DEC, Albany, New York, 1979.

Kirkland, Gordon L. Jr. et al, Mammal Survey of Essex County, New York, Shippensburg State College, 1975.

Kretser, W., J. Gallagher and J. Nicolette, Adirondack Lakes Study 1984-1987, An Evaluation of Fish Communities and Water Chemistry, Adirondack Lakes Survey Corportion, Ray Brook, New York, 1989.

Kretser, Walter A. and Lois E. Klatt, 1976-1977 New York Angler Survey Final Report, NYSDEC, 1981.

Loucks, O. L., Acid Rain: Living Resource Implications and Management Needs, Trans. N. Amer. Wildl. Conf. 45:24-37, 1980.

Manning, Robert E., Crowding Norms in Backcountry Settings: A Review and Synthesis, Journal of Leisure Research, 1985.

Mather, F., Memoranda relating to Adirondack fishes with descriptions of new species, from researches made in 1882, appendix E, New York State Land Survey, p. 113-182, 1884.

McMartin, Barbara et al., Discover the West Central Adirondcks, Backcountry Publications, Woodstock, Vermont, 1988.

Miller, William, Draft Adirondack Brook Trout Restoration and Enhancement Program, NYS DEC, Warrensburg, New York, 1988.

New York Natural Heritage Program, Plant and Animal Status Reports, Wildlife Resources Center, Delmar, New York, 1988.

New York State Breeding Bird Atlas, A Project of the Federation of New York State Bird Clubs in Cooperation with New York State Department of Environmental Conservation, Cornell University Laboratory of Ornithology, National Audubon Society, New York State Museum.

New York State Department of Environmental Conservation, Unit Management Plans, Black Mountain/Lake George Wild Forest (1985), Hammond Pond Wild Forest (1988), and Pharoah Lake Wilderness Complex (1992), Ray Brook, New York.

New York State Department of Environmental Conservation, Unit Management Plan Fulton Chain Wild Forest (1990), Watertown, New York.

Palmer, R. S., Handbook of North American Birds, Vol. 1, Yale University Press, New Haven, pp. 21-35, ed. 1962.

Parker, Karl E. Foraging and Reproduction of the Common Loon on Acidified Lakes in the Adirondack Park, New York, Thesis, August 1985.

Peterson, Roger Tory, A Field Guide to the Birds, Houghton Mifflin Company, Boston, 1980.

Pfeiffer, Martin H., A Comprehensive Plan for Fish Resource Management Within the Adirondack Zone, NYS DEC, Ray Brook, New York 1979.

Pfeiffer, Martin H. and Patrick J. Festa, Acidity Status of Lakes in the Adirondack Region of New York in Relation to Fish Resources, NYS DEC 1980.

Pough, F. H., Acid Precipitation and Embryonic Mortality of Spotted Salamanders, Ambystoma maculatum, Science 192:68-70.

Preston, George L., Vertical Distribution of Small Mammal Species of Whiteface Mountain, Essex County, New York, Technical Research Report, Plattsburgh State University, 1974.

Redington, Robert J., Guide to Trails of the West Central Adirondacks, Adirondack Mountain Club, Inc., Glens Falls, New York, 1980.

Reilly, Edgar M., NYSDEC Information Leaflet on Snakes of New York, Volume 9, Number 6, New York State Conservationist, 1955.

Reilly, Edgar M. NYSDEC Information Leaflet on Salamanders and Lizards of New York, Volume 11, Number 6, New York State Conservationist.

Review and Evaluation of National Park Service Fisheries Policies and Practices. Report of the Ad Hoc Fisheries Task Force to Assistant Secretary of the Interior, Robert L. Herbat, 1979.

Saber, S. A. and W. A. Dunson, Toxicity of Bog Waters to Embryonic and Larval Anuran Amphibians, J. Exp. Zool. 204:33-42, 1978.

Schofield, C. L., and C. T. Driscoll, Fish Species Distribution in Relation to Water Quality Gradients in the North Branch of the Moose River Basin, 1987.

Scott, W. B. and E. J. Crossman, Freshwater Fishes of Canada, Fisheries Research Board of Canada, Ottawa, 966 pp., 1973.

Stankey, George H., Visitor Perception of Wilderness Recreation Carrying Capacity, 1973.

Stuart, James M. and Jay A. Bloomfield, Characteristics of New York State Lakes - Gazeteer of Lakes, Ponds and Reservoirs, NYS DEC, 1985.

Titus, James R., Response of the Common Loon to Recreational Pressure in the Boundary Waters Canoe Area, Northeastern Minnesota. PhD Thesis. Syracuse College of Environmental Science and Forestry, Syracuse, New York, 1978

Twenty/Twenty Vision: Fulfilling the Promise of the Adirondack Park (Volume 1, Biological Diversity), The Adirondack Council, Elizabethtown, New York, 1988).

Van Valkenburgh, Norman J., Unit Planning for Wilderness Management, The Association for the Protection of the Adirondacks, Schenectady, New York, 1987.

Wainwright, John F., Investigation of Elevated DDT Levels in Stream Sediments in the Adirondack Mountains of New York, 1985.

GENERAL DEFINITIONS

As used in this plan, the following terms shall have the following meanings:

ACID BOG PONDS	Naturally acidic ponds with marginal to lethal pH values and characteristic bog vegetation.
ACIDIFIED PONDS	Ponds exhibiting marginal to lethal pH values from natural causes or as a result of acid precipitation. Many have pH values below 5, are no longer capable of supporting fish species, and are at elevations in excess of 2,000 feet.
BEAVER PONDS	Impoundments created by dam building activities of beaver.
BOAT LAUNCHING SITES	Developed sites which provide public access to relatively large waters by providing ramps for launching trailered boats along with parking facilities for vehicles and trailers.
CAMPGROUND	A concentrated, developed camping area with controlled access which is designed to accommodate a significant number of overnight visitors and may incorporate associated day use facilities such as picnicking.
CHEMICALLY UNSUITABLE WATERS	Waters either heavily polluted or eutrofied. Generally exhibiting dissolved oxygen deficits or other severe water chemistry problems.
ENDANGERED SPECIES	Fish species or strains which are in imminent danger of extinction in this geographic area. Example-Round Whitefish.
FISH BARRIER DAM	A man-made device or structure used to prevent the upstream or downstream migration of fish for the purpose of protecting a high-value fishery or population of fish indigenous to the protected body of water.
FISHING ACCESS SITE	A developed site on a lake or river which provides public access and parking space for vehicles and is generally, but not always, limited to hand launching.
FORAGE FISHES	Small fishes which serve as food for larger, carniverous fishes; e.g., rainbow smelt represents a traditional forage fish for landlocked salmon.
FOOT TRAIL	A marked and maintained path or way for foot travel.

GENERAL DEFINITIONS

HERITAGE BROOK TROUT PONDS	Ponds supporting recognized native, wild strains of brook trout, undiluted by hatchery plantings, preserved for the sake of their pure gene pools.
LEANTO	An open front shelter made of natural materials suitable for temporary or transient residence.
MOTOR VEHICLE	A device for transporting personnel, supplies or material that uses a motor or an engine of any type for propulsion and has wheels, tracks, skids, skis, air cushion or other contrivance for traveling on, or adjacent to air, land and water or through water.
MOTORBOAT	A device for transporting personnel or material that travels over, on or under the water and is propelled by a non-living power source on or within the device.
MULTI-SPECIES WATERS	Waters which support more than one fish species. The great bulk of Adirondack Zone waters meets this definition.
NATIVE SPECIES WATERS	Waters supporting native Adirondack Zone fish species. Example: brook trout, lake trout, round whitefish.
NATURAL MATERIALS	Construction components drawn from the immediate project site or materials brought into the construction site that conform in size, shape and physical characteristics to those naturally present in the vicinity of the project site. Such materials include stone, logs and sawn and treated timber. Natural materials may be fastened or anchored by use of bolts, nails, spikes or similar means.
NATURAL SPAWNING ADEQUATE (N.S.A.) WATERS	Brook trout ponds and numerous small, headwater stream sections with mainly slow-growing or stunted brook trout populations which are self-maintained by natural reproduction. Also includes the great majority of warmwater and non-game fish resources.
NONNATIVE SPECIES WATERS	Waters suporting introduced, nonnative fish species, such as yellow perch and black bass.
pH VALUE	Represents the effective concentration of hydrogen ion. The practical pH scale extends from 0 (very acid) to 14 (very alkaline). Waters with a pH value below 7

	are acid while those above this value are alkaline.
PRIMITIVE TENT SITE	An undeveloped camping site providing space for not more than three tents, which may have an associated pit privy and fire ring, designed to accommodate a maximum of eight people.
RECLAMATION	A management technique involving the application of a fish toxicant such as "rotenone" to eliminate undesirable fish populations.
REMOTE PONDS (NOT SEEN)	Generally small, inaccessible ponds which have never been surveyed.
ROAD	An improved way designed for travel by motor vehicles and either, (a) maintained by a state agency or a local government and open to the general public; or (b) maintained by private persons or corporations primarily for private use but which may also be partly or completely open to the general public for all or a segment thereof; or (c) maintained by the Department of Environmental Conservation and open to the public on a discretionary basis; or (d) maintained by the Department of Environmental Conservation for its administrative use only.
SIGNIFICANT FISHING STREAMS	Streams or sections of streams which have an average summer width of more than 5 feet if coldwater and more than 50 feet if warmwater.
SINGLE SPECIES WATERS	Ponds and stream sections which represent a monoculture of game fishes. Primarily successfully reclaimed ponds and N.S.A. brook trout stream sections.
SMALL PONDS	Ponds of less than one surface acre which are generally considered too small for management purposes or to provide significant angling opportunities.
SMALL STREAMS	Streams less than one mile long and less than 0.5 cfs summer flow. Too small to be considered for management purposes.
SNOWMOBILE	A motor vehicle designed primarily to travel on snow or ice by means of skis, skids, tracks or other devices. It is specifically excluded from the definition of "motor vehicles" in 6NYCRR and the Vehicle and Traffic Law.

GENERAL DEFINITIONS

SNOWMOBILE TRAIL	A marked trail designated by the Department of Environmental Conservation on which, when covered by snow and ice, snowmobiles are allowed to travel.
SPECIAL ANGLING REGULATIONS	Departures from the statewide angling regulations. These are currently expressed as options in the fishing guide. May be more liberal or more restrictive than the statewide regulations.
TRAILHEAD	A point of entrance to state land which may contain some or all of the following: vehicle parking, trail signs, and visitor registration structures.
WARM STREAMS	Streams with summer water temperatures too warm for salmonid survival and not considered for salmonid stocking.
WARMWATER STREAMS	Streams or stream sections which support and are managed for populations of warmwater fishes and where high summer water temperatures preclude year-round survival of coldwater fishes.

Table 1. Pigeon Lake Wilderness Area - Ponded Water Inventory Data

Name	P#	File #	* Wshed	County	USGS Quad (7.5')	Mgmt. Class	Area (acres) NYSBSU	Max. Depth (feet)	Planimetered Mean Depth (ft)	Plan. Volume (cubic meters)
Cascade Lake	747	1077	B	Hamilton	Eagle Bay	ADK. BROOK	100.8	20	13.8	1718878
Chain Pond (Lower)	326	738	R	Hamilton	Eagle Bay	OTHER	3.7	10	4.6	34275
Chain Pond (Middle)	327	739	R	Hamilton	Eagle Bay	OTHER	10.1	34	13.4	164616
Chain Pond (Upper)	328	740	R	Hamilton	Eagle Bay	OTHER	6.4	18	5.9	21686
Chub Lake	778	1113	B	Hamilton	Eagle Bay	ADK. BROOK	46.5	33	12.5	717346
Constable Pond	777	1112	B	Hamilton	Eagle Bay	ADK. BROOK	53.6	13	6.9	434780
Cranberry Pond	319	729	R	Hamilton	Raquette Lake	COLDWATER	26.9	8	2.9	94155
East Pond	571	823	B	Herkimer	Eagle Bay	ADK. BROOK	27.4	25	9.5	306946
Gull Lake (Lower)	758	1089	B	Hamilton	Eagle Bay	OTHER	27.2	12	4.3	144693
Gull Lake (Upper)	762	1096	B	Hamilton	Eagle Bay	OTHER	25.9	14	8.5	266376
Haymarsh Pond (Middle)	323	734	R	Hamilton	Raquette Lake	ADK. BROOK	3.7	13	4.3	26359
Haymarsh Pond (Upper)	322	733	R	Hamilton	Raquette Lake	ADK. BROOK	17.5	6	3.3	36526
Jock Pond	583	842	B	Herkimer	Eagle Bay	OTHER	6.4	13	3.9	39588
Lilypad Pond (Lower)	587	847	B	Herkimer	Eagle Bay	ADK. BROOK	23.2	15	3	83264
Little Chief Pond	757	1088	B	Herkimer	Eagle Bay	OTHER	6.7	5	2	16871
Lone Pond	331	744	R	Hamilton	Raquette Lake	OTHER	3.5	14	5.2	31828
Mays Lake	775	1110	B	Hamilton	Eagle Bay	ADK. BROOK	33.4	17	10.5	419980
Merriam Lake	756	1087	B	Herkimer	Eagle Bay	OTHER	19.8	17	5.9	143378
Oswego Pond	585	845	B	Herkimer	Big Moose	ADK. BROOK	9.1	14	5.6	56304
Otter Pond	759	1092	B	Hamilton	Nehasne Lake	OTHER	10.6	8.2	3.9	54576
Pelchar Pond	325	736	R	Hamilton	Raquette Lake	ADK. BROOK	44	11	5.6	319415
Pigeon Lake	779	1114	B	Hamilton	Eagle Bay	ADK. BROOK	44.5	19	5.6	319732
Pug Hole	775a	1111	B	Hamilton	Eagle Bay	ADK. BROOK	11.4	8	2.3	33202
Queer Lake	329	741	R	Hamilton	Eagle Bay	COLDWATER	142.1	70	35.7	5960110
Russian Lake	774	1108	B	Hamilton	Eagle Bay	OTHER	37.3	21	12.1	562109
Shallow Lake	324	735	R	Hamilton	Raquette Lake	TWO STORY	267.9	30	11.2	3631588
Sister Lake (Lower)	768	1102	B	Hamilton	Nehasane Lake	COLDWATER	86.5	10	5.2	546688
Sister Lake (Upper)	769	1103	B	Hamilton	Nehasane Lake	COLDWATER	77.1	12	7.2	691381
South Pond	582	841	B	Herkimer	Eagle Bay	OTHER	44.2	30	6.2	315795
Terror Lake	570	822	B	Hamil/Herk	Nehasane Lake	OTHER	68.7	12	4.6	354752
Townsend Pond	751	1081	B	Herkimer	Eagle Bay	OTHER	5.7	1.5	-	-

* Watershed

R Raquette
B Black

Table 1. Pigeon Lake Wilderness Area - Ponded Water Inventory Data - Continued

Name	P#	File #	* Wshed	County	USGS Quad (7.5')	Mgmt. Class	Area (acres) NYSBSU	Max. Depth (feet)	Planimetered Mean Depth (ft)	Plan. Volume (cubic meters)
Unnamed Pond	569	821	B	Hamilton	Nehasane Lake	OTHER	2.2	10	4.3	10925
Unnamed Pond	572	827	B	Herkimer	Big Moose	UNKNOWN	5.4	-	-	-
Unnamed Pond	760	1093	B	Hamilton	Nehasane Lake	ADK. BROOK	11.1	30	13.8	169438
Unnamed Pond	761	1095	B	Hamilton	Eagle Bay	UNKNOWN	5.2	-	-	-
Unnamed Pond	763	1097	B	Hamilton	Eagle Bay	UNKNOWN	3.5	-	-	-
Unnamed Pond	764	1098	B	Hamilton	Nehasane Lake	UNKNOWN	10.1	-	-	-
Unnamed Pond	765	1099	B	Hamilton	Nehasane Lake	OTHER	6.2	3	2	9240
Unnamed Pond	766	1100	B	Hamilton	Nehasane Lake	OTHER	4	3	2	7845
Unnamed Pond	767	1101	B	Hamilton	Eagle Bay	UNKNOWN	2.7	-	-	-
Unnamed Pond	785	1122	B	Hamilton	Raquette Lake	UNKNOWN	3.9	-	-	-
Unnamed Pond	5287	-	B	Hamilton	Nehasane Lake	UNKNOWN	2	-	-	-
Unnamed Pond	5288	-	B	Hamilton	Nehasane Lake	UNKNOWN	1	-	-	-
Unnamed Pond	5289	-	B	Hamilton	Nehasane Lake	UNKNOWN	9.6	-	-	-
Unnamed Pond	5290	-	B	Hamilton	Nehasane Lake	UNKNOWN	1.7	-	-	-
Unnamed Pond	5318	-	B	Herkimer	Eagle Bay	UNKNOWN	1.2	-	-	-
Unnamed Pond	5319	-	B	Herkimer	Eagle Bay	UNKNOWN	1.7	-	-	-
Unnamed Pond	5320	-	B	Herkimer	Eagle Bay	UNKNOWN	4.1	-	-	-
Unnamed Pond	5321	-	B	Herkimer	Eagle Bay	UNKNOWN	1.4	-	-	-
Unnamed Pond	5322	-	B	Herkimer	Eagle Bay	UNKNOWN	2.4	-	-	-
Unnamed Pond	5323	-	B	Herkimer	Eagle Bay	UNKNOWN	1.4	-	-	-
Unnamed Pond	5325	-	B	Hamilton	Eagle Bay	UNKNOWN	5.2	-	-	-
Unnamed Pond	5326	-	B	Herkimer	Eagle Bay	ADK. BROOK	1.7	-	-	-
Unnamed Pond	5327	-	B	Hamilton	Eagle Bay	UNKNOWN	6.4	-	-	-
Unnamed Pond	5328	-	B	Hamilton	Eagle Bay	UNKNOWN	1.5	-	-	-
Unnamed Pond	5332	-	B	Herkimer	Eagle Bay	ADK. BROOK	2.4	-	-	-
Unnamed Pond	5333	-	B	Herkimer	Eagle Bay	ADK. BROOK	10.1	-	-	-
Unnamed Pond	5334	-	B	Hamilton	Eagle Bay	UNKNOWN	4.9	-	-	-
Unnamed Pond	5335	-	B	Hamilton	Eagle Bay	UNKNOWN	5.4	-	-	-
Unnamed Pond	5336	-	B	Hamilton	Eagle Bay	UNKNOWN	4.2	-	-	-
Unnamed Pond	5341	-	B	Herkimer	Big Moose	UNKNOWN	2.4	-	-	-
Unnamed Pond	5342	-	B	Herkimer	Big Moose	UNKNOWN	3.4	-	-	-
Unnamed Pond	5521	-	B	Hamilton	Raquette Lake	UNKNOWN	2	-	-	-
Unnamed Pond	5523	-	B	Hamilton	Raquette Lake	UNKNOWN	6.9	-	-	-
Unnamed Pond	5524	-	B	Hamilton	Raquette Lake	UNKNOWN	5.7	-	-	-
Unnamed Pond	320	731	R	Hamilton	Raquette Lake	UNKNOWN	0.7	-	-	-
Unnamed Pond	330	742	R	Hamilton	Eagle Bay	ADK. BROOK	10.4	8	3.3	37405
Unnamed Pond	5062	-	R	Hamilton	Brandreth Lake	UNKNOWN	18.5	-	-	-
Unnamed Pond	5216	-	R	Hamilton	Eagle Bay	UNKNOWN	1.2	-	-	-
Upper Brown's Tract Pond	317	723	R	Hamilton	Raquette Lake	WARMWATER	48.9	27	11.8	739406
Windfall Pond	750a	1081	B	Herkimer	Eagle Bay	ADK. BROOK	5.9	20	10.5	77953

* Watershed

R Raquette
B Black

TOTAL	(71)	1520.4	acres
ADK. BROOK	(18)	456.7	acres
COLDWATER	(4)	332.6	acres
OTHER	(17)	288.6	acres
TWO-STORY	(1)	267.9	acres
UNKNOWN	(30)	125.7	acres
WARMWATER	(1)	48.9	acres

Table 2. Pigeon Lake Wilderness - Ponded Water Survey Data

Name	P#	Most Recent Chemical Survey Date	Source	ANC (ueq/l)	pH	Conductivity	Most Recent Biological Survey Date	Source	No. Gillnets **	Fish Species Present and Number Caught *	ST/Gillnet **
Cascade Lake	747	1984	ALSC	30.9	6.45	26.1	1984	ALSC	4	ST-5,YP-120,WS-68,BhC-9	1.25
Chain Pond (Lower)	326	1984	ALSC	-15.6	4.62	25.5	1984	ALSC	1	No fish captured	0
Chain Pond (Middle)	327	1984	ALSC	-10.2	4.7	24.2	1984	ALSC	2	No fish captured	0
Chain Pond (Upper)	328	1984	ALSC	-13.6	4.62	25.9	1984	ALSC	1	No fish captured	0
Chub Lake	778	1984	ALSC	-0.7	5.16	24	1984	ALSC	3	ST-1 (305mm)	0.33
Constable Pond	777	1984	ALSC	-4	4.92	25.5	1984	ALSC	4	BhC-2	0
Cranberry Pond	319	1984	ALSC	65.1	6.67	28	1984	ALSC	1	ST-2,WS-26,BhC-46,PKS-9,GS-194,CS-19	2
East Pond	571	1985	ALSC	-11	4.7	24	1985	ALSC	3	No fish captured	0
Gull Lake (Lower)	758	1984	ALSC	-8.6	4.75	25.5	1984	ALSC	3	No fish captured	0
Gull Lake (Upper)	762	1984	ALSC	-0.5	4.96	22	1984	ALSC	2	No fish captured	0
Haymarsh Pond (Middle)	323	1984	ALSC	5.2	5.61	23.4	1984	ALSC	1	No fish captured	0
Haymarsh Pond (Upper)	322	1984	ALSC	3.6	5.48	25	1984	ALSC	1	No fish captured	0
Jock Pond	583	1984	ALSC	-9.9	4.72	24.5	1984	ALSC	1	No fish captured	0
Lilypad Pond (Lower)	587	1984	ALSC	-9	4.68	25.8	1984	ALSC	2	No fish captured	0
Little Chief Pond	757	1986	ALSC	-24.9	4.5	27.3	1986	ALSC	1	Central mudminnow-3	0
Lone Pond	331	1984	ALSC	-16.8	4.82	21.2	1984	ALSC	1	No fish captured	0
Mays Lake	775	1986	ALSC	-10.3	5.19	23.8	1986	ALSC	3	BhC-10,Central mudminnow-2	0
Merriam Lake	756	1984	ALSC	-9.6	4.74	22.5	1984	ALSC	2	No fish captured	0
Oswego Pond	585	1984	ALSC	1.2	5.05	22.1	1984	ALSC	1	ST-1 (232 mm)	1
Otter Pond	759	1984	ALSC	-1.8	4.97	26.8	1984	ALSC	2	No fish captured	0
Pelchar Pond	325	1984	ALSC	1.8	5.05	25.5	1984	ALSC	3	PKS-161	0
Pigeon Lake	779	1984	ALSC	-6.6	4.85	26.5	1984	ALSC	3	No fish captured	0
Pug Hole	775a	1985	ALSC	-21.4	4.81	26.3	1985	ALSC	2	No fish captured	0
Queer Lake	329	1986	ALSC	8.5	5.46	22.6	1986	ALSC	5	ST-18 (110-395mm),BhC-217,PKS-10,WS-2,GS-1	5.6
Russian Lake	774	1984	ALSC	-3.8	4.79	26	1984	ALSC	2	YP-3	0
Shallow Lake	324	1984	ALSC	41.4	6.38	25.8	1984	ALSC	6	ST-27,SMB-3,WS-144,PKS-66,CS-46,GS-60,BhC-82	4.5
Sister Lake (Lower)	768	1984	ALSC	-5.1	4.95	23	1984	ALSC	4	YP-178,Bhc-37,PKS-9	0
Sister Lake (Upper)	769	1984	ALSC	-1.1	4.9	23.1	1984	ALSC	4	ST-1,YP-330,WS-24,BhC-55,GS-3	0.25
South Pond	582	1984	ALSC	-3.8	4.89	23.2	1984	ALSC	3	No fish captured, 1 crayfish in net	0
Terror Lake	570	1984	ALSC	-11.5	4.78	24.2	1984	ALSC	4	No fish captured, crayfish present	0
Townsend Pond	751	-	-	-	-	-	1976	NYSDEC	-	Unknown	-

* Fish species caught by various gear
** 150-foot Swedish gillnet

Bhc Brown bullhead
BND Blacknose dace
CC Creek Chub
CS Common shiner
CM Cutlips minnow
GS Golden shiner
LMB Largemouth Bass
LT Lake trout
NRD Northern redbelly dace
PKS Pumpkinseed
SMB Smallmouth bass
ST Brook trout
WS White sucker
YP Yellow perch

Table 2. Pigeon Lake Wilderness - Ponded Water Survey Data - Continued

Name	P#	Most Recent Chemical Survey Date	Source	ANC (ueq/l)	pH	Conductivity	Most Recent Biological Survey Date	Source	No. ** Gillnets	* Fish Species Present and Number Caught	** ST/Gillnet
Unnamed Pond	569	1984	ALSC	-20.8	4.65	24.5	1984	ALSC	1	No fish captured	0
Unnamed Pond	572	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	760	1984	ALSC	0.3	5.03	25	1984	ALSC	2	No fish captured	0
Unnamed Pond	761	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	763	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	764	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	765	1984	ALSC	-20.4	4.59	26.5	1984	ALSC	1	No fish captured	0
Unnamed Pond	766	1984	ALSC	-16.7	4.58	30	1984	ALSC	1	No fish captured	0
Unnamed Pond	767	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	785	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5287	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5288	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5289	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5290	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5318	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5319	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5320	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5321	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5322	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5323	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5325	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5326	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5327	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5328	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5332	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5333	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5334	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5335	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5336	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5341	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5342	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5521	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5523	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5524	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	320	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	330	1984	ALSC	-4	4.91	25	1984	ALSC	1	No fish captured	0
Unnamed Pond	5062	-	-	-	-	-	-	-	-	Unknown	-
Unnamed Pond	5216	-	-	-	-	-	-	-	-	Unknown	-
Upper Brown's Tract Pond	317	1984	ALSC	132.9	7.22	33	1984	ALSC	4	LMB-7,YP-19,WS-43,PKS-12,BhC-13,GS-7,CS-1	0
Windfall Pond	750a	1985	ALSC	149.2	7.23	36.2	1985	ALSC	2	ST-1(305 mm),WS-16(dwarf?),NRD-105,BND-179,CC-1	0.5

* Fish species caught by various gear
** 150-foot Swedish gillnet

Bhc Brown bullhead
BND Blacknose dace
CC Creek Chub
CS Common shiner
CM Cutlips minnow
GS Golden shiner
LMB Largemouth Bass
LT Lake trout
NRD Northern redbelly dace
PKS Pumpkinseed
SMB Smallmouth bass
ST Brook trout
WS White sucker
YP Yellow perch

TABLE 3.

CLASSIFICATION OF COMMON ADIRONDACK UPLAND FISH FAUNA INTO NATIVE, NONNATIVE, AND NATIVE BUT WIDELY INTRODUCED
Adapted from George, 1980

NATIVE TO ADIRONDACK UPLAND

Blacknose dace
White sucker
Longnose sucker
Northern redbelly dace
Redbreast sunfish
Pinescale dace
Longnose dace
Slimy sculpin
Lake chub
Redhorse suckers (spp.)
Common shiner

NATIVE SPECIES WIDELY INTRODUCED[1]

Brook trout
Brown bullhead
Pumpkinseed
Lake trout
Creek Chub

NONNATIVE

Golden shiner
Chain pickerel
Bluntnose minnow
Largemouth bass
Johnny darter
Brown trout
Splake
Whitefish
Rainbow smelt
Northern pike
Rock bass
Smallmouth bass
Yellow perch
Fathead minnow[2]
Rainbow trout
Atlantic salmon
Banded killifish
Central mudminnow

These native fishes are known to have been widely distributed throughout Adirondack uplands by DEC, bait bucket introduction, and unauthorized stocking. This means that their presence does not necessarily indicate endemicity. Other native species listed above also may have been moved from water to water in the Adirondack Upland, but the historical record is less distinct.

Not mentioned by Mather (1884) from Adirondack collections, minor element southern Adirondack Uplands (Greeley 1930-1935).

Table 4

Pigeon Lakes Wilderness
Early Surveys vs. Present Day Fish Distribution

Lake Category	# Lakes Pre-1976	% Fish Communities	# Lakes Post-1976	% Fish Communities	Net Change # Lakes	%Net Change For Species
GENERAL						
Total # Lakes	71		71			
# Unknown	44		34			
# Surveyed	27		37			
# Fishless	12		22		10	
# Fish Communities	15		15		0	
BROOK TROUT						
# Viable Brook Trout Populations *	12	80%	3	20%	-9 **	-75%
# NSA Populations	Unknown		1	7%		
NATIVE BUT WIDELY INTRODUCED						
# Lake Trout	1	7%	0	0%	-1	-100%
# Brown Bullhead	10	67%	9	60%	-1	-10%
# Pumpkinseed	11	73%	5	33%	-6	-55%
# Creek Chub	5	33%	1	7%	-4	-80%
NATIVE						
# White Sucker	10	67%	7	47%	-3	-30%
# Lake Chub	1	7%	0	0%	-1	-100%
# Blacknose Dace	1	7%	1	7%	0	0%
# Northern Redbelly Dace	2	13%	1	7%	-1	-50%
# Common Shiner	3	20%	3	20%	0	0%
NONNATIVE						
# Yellow Perch	4	27%	5	33%	1	25%
# Golden Shiner	5	33%	5	33%	0	0%
# Smallmouth Bass	3	20%	1	7%	-2	-67%
# Largemouth Bass	0	0%	1	7%	1	100%
# Fathead Minnow	1	7%	0	0%	-1	-100%
# Banded Killifish	1	7%	0	0%	-1	-100%
# Central Mudminnow	2	13%	2	13%	0	0%

* Excludes waters where only one or two brook trout were captured and/or unsubstantiated, anectdotal accounts of brook trout presence are the only historical record

BIRDS OF THE PIGEON LAKE WILDERNESS AREA

COMMON NAME	SCIENTIFIC NAME	NEW YORK LEGAL STATUS
Common Loon	Gavia immer	Protected - Special Concern
Great Blue Heron	Ardea Herodias	Protected
Green-backed Heron	Butorides striatus	Protected
American Bittern	Botaurus lentiginosus	Protected
Mallard	Anas platyrhynchos	Game Species
American Black Duck	Anas rubripes	Game Species
Hooded Merganser	Lophodytes cucullatus	Game Species
Northern Goshawk	Accipiter gentilis	Protected
Sharp-shinned Hawk	Accipiter striatus	Protected
Cooper's Hawk	Accipiter cooperii	Protected-Special Concern
Red-tailed Hawk	Buteo platypterus	Protected
Broad-winged Hawk	Buteo platypterus	Protected
Golden Eagle	Aquila chrysaetos	Endangered
Osprey	Pandion haliaetus	Threatened
Ruffed Grouse	Bonasa umbellus	Game Species
Killdeer	Charadrius vociferus	Protected
Common Snipe	Gallinago gallinago	Game Species
Spotted Sandpiper	Actitis macularia	Protected
Black-billed Cuckoo	Coccyzus erythropthalmus	Protected
Barred Owl	Strix varia	Protected
Chinmney Swift	Chaetura pelagica	Protected
Ruby-throated Hummingbird	Archilochus colubris	Protected
Belter Kingfisher	Ceryle alcyon	Protected
Northern Flicker	Colaptes auratus	Protected
Pileated Woodpecker	Dryocopus pileatus	Protected
Yellow-bellied Sapsucker	Sphyrapicus varius	Protected
Hairy Woodpecker	Picoides villosus	Protected
Wood Duck	Aix sponsa	Game Species
Red-shouldered Hawk	Buteo lineatus	Threatened
Common Merganser	Mergus mergnser	Game Species
Bald Eagle	Haliaeetus leucocephalu	Endangered
Northern Harrier	Circus cyaneus	Threatened

APPENDIX 5

COMMON NAME	SCIENTIFIC NAME	STATUS
Veery	Catharus fuscescens	Protected
Eastern Bluebird	Sialia sialis	Protected
Golden-crowned Kinglet	Regulus satrapa	Protected
Ruby-crowned Kinglet	Regulus calendula	Protected
Cedar Waxwing	Bombycilla cedrorum	Protected
European Starling	Sturnus vulgaris	Unprotected
Solitary Vireo	Vireo solitarius	Protected
Red-eyed Vireo	Vireo olivaceus	Protected
Black-and-white Warbler	Mniotilta varia	Protected
Nashville Warbler	Vermivora ruficapilla	Protected
Northern Parula	Parula americana	Protected
Magnolia Warbler	Dendroica magnolia	Protected
Black-throated Blue Warble	Dendroica caerulescens	Protected
Eastern Phoebe	Sayornis phoebe	Protected
Cliff Swallow	Hirundo pyrrhonota	Protected
Philadelphia Vireo	Vireo philadelphicus	Protected
Bobolink	Dolichonyx oryzivorus	Protected
Evening Grosbeak	Coccothraustes vespertinus	Protected
Alder Flycatcher	Empidonax alnorum	Protected
Blackpoll Warbler	Dendroica striata	Protected
Northern Waterthrush	Seiurus noveboracensis	Protected
Common Yellowthroat	Geothlypis trichas	Protected
Bay-breasted Warbler	Dendroica castanea	Protected
Louisiana Waterthrush	Seiurus motacilla	Protected
Tufted Titmouse	Parus bicolor	Protected
Yellow-rumped Warbler	Dendroica coronata	Protected
Black-throated Green Warbler	Dendroica virens	Protected
Blackburnian Warbler	Dendroica fusca	Protected
Chestnut-sided Warbler	Dendroica pensylvanica	Protected
Ovenbird	Seiurus aurocapillus	Protected
Mourning Warbler	Oporornis philadelphia	Protected
Common Yellowthroat	Geothlypis trichas	Protected
Canada Warbler	Wilsonia canadensis	Protected
American Redstart	Setophaga ruticilla	Protected
Red-winged Blackbird	Agelaius phoeniceus	Protected

APPENDIX 5

COMMON NAME	SCIENTIFIC NAME	STATUS
American Woodcock	Scolopax minor	Game Species
Herring Gull	Larus argentatus	Protected
Eastern Screech-Owl	Otus asio	Protected
Eastern Kingbird	Tyrannus tyrannus	Protected
Red-Shouldered Hawk	Buteo lineatus	Threatened
American Kestrel	Falco sparverius	Protected
Spruce Grouse	Dendragapus canadensis	Threatened
Northern Saw-whet Owl	Aegolius acadicus	Protected
Double-crested Cormorant	Phalacrocorax auritus	Protected
Blue-winged Teal	Anas discors	Game Species
Turkey Vulture	Cathartes aura	Protected
Downy Woodpecker	Picoides pubescens	Protected
Black-backed Woodpecker	Picoides arcticus	Protected
Three-toed Woodpecker	Picoides tridactylus	Protected
Yellow-bellied Flycatcher	Empidonax flaviventri	Protected
Least Flycatcher	Empidonax minimus	Protected
Eastern Wood-Pewee	Contopus virens	Protected
Olive-sided Flycatcher	Contopus borealis	Protected
Tree Swallow	Tachycineta bicolor	Protected
Barn Swallow	Hirundo rustica	Protected
Gray Jay	Perisoreus canadensis	Protected
Blue Jay	Cyanocitta cristata	Protected
Common Raven	Corvus corax	Protected-Special Concern
American Crow	Corvus brachyrhynchos	Game Species
Black-capped Chickadee	Parus atricapillus	Protected
Boreal Chickadee	Parus hudsonicus	Protected
White-breasted Nuthatch	Sitta carolinensis	Protected
Red-breasted Nuthatch	Sitta canadensis	Protected
Brown Creeper	Certhia americana	Protected
Winter Wren	Troglodytes troglodytes	Protected
Gray Catbird	Dumetella carolinensis	Protected
American Robin	Turdus migratorius	Protected
Wood Thrush	Hylocichla mustelina	Protected
Hermit Thrush	Catharus guttatus	Protected
Swainson's Thrush	Catharus ustulus	Protected

APPENDIX 5

COMMON NAME	SCIENTIFIC NAME	STATUS
Rusty Blackbird	Euphagus carolinus	Protected
Common Grackle	Quiscalus quiscula	Protected
Scarlet Tanager	Piranga olivacea	Protected
Rose-breasted Grosbeak	Pheucticus ludovicianus	Protected
Indigo Bunting	Passerina cyanea	Protected
Purple Finch	Carpodacus purpureus	Protected
American Goldfinch	Carduelis tristis	Protected
Red Crossbill	Loxia curvirostra	Protected
White-winged Crossbill	Loxis leucoptera	Protected
Dark-eyed Junco	Junco hyemalis	Protected
Chipping Sparrow	Spizella passerina	Protected
White-throated Sparrow	Zonotrichia albicollis	Protected
Lincoln's Sparrow	Melospiza lincolnii	Protected
Swamp Sparrow	Melospiza georgiana	Protected
Song Sparrow	Melospiza melodia	Protected
Brown-headed Cowbird	Molothrus ater	Protected
Evening Grosbeak	Coccothraustes vespertinus	Protected
Pine Siskin	Carduelis pinus	Protected
House Sparrow	Passer domesticus	Unprotected
Northern Oriole	Icterus galbula	Protected
House Finch	Carpodacus mexicanus	Protected
Bank Swallow	Riparia riperia	Protected

APPENDIX 6

COMMENTS ON BIRD SPECIES HABITATS

1. COMMON LOON: Prefers bog and undisturbed lakes for breeding and open water for feeding. Nick Volkman of the 1978 DEC Loon Study Project believes the loon population is doing well. Private estates, remote state land away from human disturbance account for a stable population of approximately 100 breeding loon pairs within the Adirondack region. The DEC 1978 Loon Breeding Survey documented loons nesting in the Pigeon Lake Wilderness Area on Cascade, Queer, Upper Sister and Lower Sister Lakes. The common loon is a species of priority concern to the NYSDEC Endangered Species Unit.

2. GREAT BLUE HERON: Usually breeding in the tops of the tallest deciduous trees close to water, this heron is an uncommon nester in the Pigeon Lake Wilderness Area. The 1981 NYS Bird Breeding Atlas Project has documented the nesting of this heron in Block 5085 which includes a portion of the Pigeon Lake Wilderness Area.

3. AMERICAN BITTERN: Prefers marsh habitats, especially where cattails occur. In the Pigeon Lake Wilderness Area, the bittern is considered rare but can be observed in suitable habitat. The 1981 NYS Bird Breeding Atlas Project has documented the nesting of this bittern in Block 5085 which includes a portion of the Pigeon Lake Wilderness Area.

4. HOODED MERGANSER: Frequent wooded swamps, beaver ponds, and quiet stretches of water in forested regions, especially where dead trees are plentiful. In the Pigeon Lake Wilderness Area, this duck is often seen at Ferd's Bog and it is assumed that it breeds there (La France, 1975).

5. COMMON MERGANSER: This species is one of the characteristic breeding birds of the Adirondack forest lakes. It is undoubtedly the most common breeding duck in the Adirondack Park. In the Pigeon Lake Wilderness Area, breeding has been confirmed at Sucker Brook Bay of Raquette Lake (Bull, 1974).

6. SHARP-SHINNED HAWK: Prefers the younger second growth mixed hardwood conifer woodlands. This species is considered a very rare and local breeder in the Adirondack Park. In the Pigeon Lake Wilderness Area, this hawk may possibly be nesting. The 1981 NYS Bird Breeding Atlas Project has listed this bird as a possible breeder in Block 5085 which is in or near the Pigeon Lake Wilderness Area.

7. RED-SHOULDERED HAWK: This species prefers swampy woodlands and forested areas near rivers. The red-shouldered hawk was never common in the Adirondacks and in recent years its population has further declined. This hawk is probably breeding in the Pigeon Lake Wilderness Area as based upon the report of La France (1975).

8. COOPERS HAWK: Found chiefly in low, alluvial forest and wooded swamps, the Coopers hawk was formerly a common nester throughout the Adirondacks but it is virtually absent now. Recently, it was listed as "rare" within

the Adirondack Park by the Adirondack Park Agency. Although it is rare, this species may be observed infrequently in the Pigeon Lake Wilderness Area and it may still be breeding there.

9. BROAD-WINGED HAWK: The most important habitat requirement for this species is extensive woodland. It is the most common breeding hawk in the Adirondacks.

10. BALD EAGLE: Restricted mostly to lake and river shores, although they are found along mountain ridges during migration. As many as 30 bald eagle pairs may have nested in the Adirondacks prior to their precipitous decline in the 1950's. As a result of restoration efforts initiated by the DEC in 1983 a total of four bald eagle nests are known to exist in the Adirondacks, none of which are found within the Pigeon Lake Wilderness Area. The bald eagle remains an endangered species.

11. NORTHERN HARRIER: This hawk is most prevalent in the open country, hunting over fields in farming areas, as well as marshes. Unlike other raptors, northern harriers nest on the ground in tall grass or cattails. It has been observed in the Pigeon Lake Wilderness Area during the summer but there are no recent breeding records. The northern harrier is listed as a species of priority concern to DEC's Endangered Species Program.

12. OSPREY: This raptor feeds exclusively on fish and are generally found near a lake or stream where the fishing is good. The osprey population in the United States was to the point of extirpation due to lack of breeding success. In the Adirondack Park, the osprey's breeding success has been improving in recent years. The 1981 DEC's osprey breeding survey documented a recent high of 28 active nests of which 15 were productive. Two of these active nests were located in the Pigeon Lake Wilderness Area; one was near Shallow Lake and the other was near Big Moose Lake. In addition, there was one nest site near Big Moose Lake which was inactive in 1981. The future breeding potential of osprey in the Pigeon Lake Wilderness Area does not look good. Acid precipitation is lowering the pH levels in the lakes and ponds adversely affecting the fish populations on which the osprey feed. As these lakes become even more acidic it is suspected that osprey breeding success will decline. The osprey is listed as "threatened" by New York State and present and potential nesting sites are receiving special attention by both the Department of Environmental Conservation and the Adirondack Park Agency.

13. SPRUCE GROUSE: The spruce grouse is typically found along the openings in spruce forests and spruce tamarack bogs. The northern Adirondacks are at the southern edge of its breeding range and recent surveys indicate the population is probably diminishing. In the Pigeon Lake Wilderness Area more recent sightings have been reported in the Ferd's Bog area. Spruce grouse have been observed near Lake Terror (Bull, 1974). The spruce grouse is of priority concern to DEC's Endangered Species Program.

14. AMERICAN WOODCOCK: Feeds and breeds in bottomland, including alder thickets.

15. SPOTTED SANDPIPER: Preferred habitat is lake shores and river banks.

16. HERRING GULL: It feeds along lakes and ponds and also feeds in dumps. This species is sometimes observed on the lakes and ponds of the Pigeon Lake Wilderness Area but it probably doesn't breed there.

17. NORTHERN THREE-TOED WOODPECKER: Confined to conifer forests and swamps. There are nine breeding locations documented in New York State, all in the Adirondacks (Bull, 1974). In the Pigeon Lake Wilderness Area this species is known to breed at Ferd's Bog (La France, 1976) and Big Moose Lake. The northern three-toed woodpecker is listed as "rare" within the Adirondack Park by the Adirondack Park Agency.

18. BLACK-BACKED WOODPECKER: Found in spruce, tamarack swamps and the forested slopes of spruce and fir. This permanent resident of the Adirondack Park has been hampered by lumbering and other human activities and they are declining in population. In the Pigeon Lake Wilderness Area this species is known to breed at Ferd's Bog (La France, 1976), Big Moose Lake and near the Brown's Tract Ponds (Beehler, 1978). The black-backed woodpecker is listed as "rare" within the Adirondack Park by the Adirondack Park Agency.

19. EASTERN KINGBIRD: Usually found in open country conspicuously perched atop the highest limbs of dead trees. In wilderness areas they are occasionally found along streams or marshes if there is sufficient open territory to hunt. The 1981 NYS Bird Breeding Atlas Project has documented the nesting of this species in Block 5285 and 5284 which are in or near to the Pigeon Lake Wilderness Area.

20. YELLOW-BELLIED FLYCATCHER: Found in second growth woods of spruce, balsam and birch at elevations between 2,000 and 4,000 feet. Considered an uncommon to rare breeder in the Pigeon Lake Wilderness Area where it is known to nest in the area of Brown's Tract Ponds and Ferd's Bog.

21. GRAY JAY: Confined to the Adirondack Park in New York where it is found in dense spruce and tamarack swamps and the balsam belt on mountain slopes. This species can be found in the Pigeon Lake Wilderness Area where it is known to breed at Ferd's Bog, Raquette Lake, and Big Moose Lake.

22. NORTHERN RAVEN: Today the northern raven is strictly confined to the more remote areas of the Adirondack Park. It is a mountain bird, favoring areas where there are cliffs and crags suitable for nesting. Breeding Bird Atlas data identifies 44 confirmed blocks (or areas) that have nesting ravens, including a number within the Pigeon Lake Wilderness Area. This species is of priority concern to DEC's Endangered Species Program.

23. BOREAL CHICKADEE: Found in spruce and balsam forests and at the edges of spruce tamarack swamps. In New York State it is found breeding only in the Adirondack Park. In the Pigeon Lake Wilderness Area, they are known to nest at Big Moose Lake (Bull, 1974).

24. WINTER WREN: Frequently found in lumber clearings.

25. WOOD THRUSH: Besides the deciduous forest, they are also found in flood plains and stream valleys.

26. RUBY-CROWNED KINGLET: This species is most often found in bogs and open woodlands. In New York State this species is known to nest only in the Adirondack Park where it is considered an uncommon breeder in the Pigeon Lake Wilderness Area. One location where this species is known to nest is at Big Moose Lake (Bull, 1974).

27. SOLITARY VIREO: Found in the mixed hardwood conifer forest at considerable elevations in New York State. Considered a common breeder in the Adirondacks.

28. NORTHERN PARULA: It is practically confined to the localities where usnea moss is fairly abundant (spruce sphagnum bogs).

29. BLACK-THROATED BLUE WARBLER: Prefers a mixed hardwood/conifer forest with a dense undergrowth.

30. BAY-BREASTED WARBLER: An inhabitant of spruce woodlands at the higher elevations in the Adirondack Park. There are at least eleven known localities in the Adirondack Park. One of these locations is north of Big Moose Lake (Bull, 1974).

31. BLACK-POLL WARBLER: The preference for stunted confiers leads the black-poll warbler higher on the mountain sides than other warblers. In the Adirondack Park it is considered a common breeder at altitudes above 3500 feet, but is rare or lacking in the forests at lower elevations.

32. NORTHERN WATERTHRUSH: Nests on banks along streams and lakes.

33. CANADA WARBLER: Found breeding along streams in thickets of willow, alder and elderberry.

34. AMERICAN REDSTART: Commonly breeds in deciduous second growth woodland and in stream-side willow thickets.

35. RUSTY BLACKBIRD: Preferred habitat is openings in wet woodlands, swamps and alder thickets. In the Adirondack Park, there are twenty breeding sites identified including one site in the Pigeon Lake Wilderness Area near Big Moose Lake. The rusty blackbird is listed as "rare" within the Adirondack Park by the Adirondack Park Agency.

36. COMMON GRACKLE: Breeds near water (marshes, streams, lakes), often nests in a black spruce tree or a tree stump.

37. BROWN-HEADED COWBIRD: Parasitizes the nest of other birds, most frequently laying its eggs in the nest of the yellow warbler and red-eyed vireo.

38. EVENING GROSBEAK: Rare breeder in coniferous forests of the Central Adirondacks. The first probable breeding record in New York State was at Cranberry Lake in June, 1945. Since then it has been observed to breed in

about 35 different localities in the Adirondack Park (Bull, 1974). One of these breeding locations is at Ferd's Bog in the Pigeon Lake Wilderness Area.

39. WHITE-WINGED CROSSBILL: Prefers the coniferous forest where it feeds on the seeds of hemlock, spruce, and larch cones. There are no breeding records for this species within the Adirondack Park but it has been observed occasionally near the Pigeon Lake Wilderness Area at Brown's Tract Ponds (Beehler, 1978). The white-winged crossbill is listed as "rare" within the Adirondack Park by the Adirondack Park Agency.

40. LINCOLN'S SPARROW: This shy and usually secretive species prefers open swamps and bogs with small spruces and tamaracks scattered about. In New York State the Lincoln's sparrow breeds only in the Adirondacks and considered to be rare. The Lincoln sparrow is known to nest in the Pigeon Lake Wilderness Area at Ferd's Bog (La France, 1976) and near the village of Beaver River (Bull, 1974).

MAMMALS OF THE PIGEON LAKE WILDERNESS AREA

Alces alces	- Moose
Blarina brevicauda	- Northern Short Tailed Shrew
Canis latrans	- Coyote
Castor canadensis	- Beaver
Clethrionomys gapperi	- Southern Red-Backed Vole
Condylura cristata	- Star-Nosed Mole
Didelphis virginiana	- Virginia Oppossum
Eptesicus fuscus	- Big Brown Bat
Erethizon dorsatum	- Porcupine
Glaucomys sabrinus	- Northern Flying Squirrel
Glaucomys volans	- Southern Flying Squirrel
Lasionycteris noctivagans	- Silver-Haired Bat
Lasiurus borealis	- Red Bat
Lasiurus cinereus	- Hoary Bat
Lepus americanus	- Varying Hare
Lutra canadensis	- River Otter
Lynx rufus	- Bobcat
Marmota monax	- Woodchuck
Martes americana	- Marten
Martex pennanti	- Fisher
Mephitis mephitis	- Stripped Skunk
Microtus chrotorrhinus	- Rock Vole
Microtus pennsylvanicus	- Meadow Vole
Microtus pinetorum	- Woodland Vole
Mus musculus	- House Mouse
Mustela erminea	- Ermine
Mustela frenata	- Long-Tailed Weasel
Mustela vision	- Mink
Myotis leibii	- Small-Footed Bat (Small-Footed Myotis)
Myotis lucifugus	- Little Brown Bat (Little Brown Myotis)
Myotis septentrionalis	- Northern Long-Eared Myotis
Myotis sodalis	- Indiana Bat (Indiana Myotis)
Napaeozapus insignis	- Woodland Jumping Mouse
Odocoileus virginianus	- White-Tailed Deer
Ondatra zibethicus	- Muskrat
Parascalops breweri	- Hairy-Tailed Mole
Peromyscus leucopus	- White Footed Mouse
Peromyscus maniculatus	- Deer Mouse
Pipistrellus subflavus	- Eastern Pipistrelle
Procyon lotor	- Raccoon
Rattus norvegicus	- Norway Rat
Sciurus carolinensis	- Grey Squirrel
Sorex cinereus	- Masked Shrew
Sorex dispar	- Long-Tailed or Rock Shrew
Sorex fumeus	- Smoky Shrew
Sorex hoyi	- Pygmy Shrew
Sorex palustris	- Water Shrew
Sylvilagus floridanus	- Eastern Cottontail
Sylvilagus transitionalis	- New England Cottontail
Synaptomys cooperi	- Southern Bog Lemming
Tamias striatus	- Eastern Chipmunk
Tamiasciurus hudsonicus	- Red Squirrel
Urocyon cinereoargenteus	- Gray Fox
Ursus americanus	- Black Bear
Vulpes vulpes	- Red Fox
Zapus husonius	- Meadow Jumping Mouse

APPENDIX 8

COMMENTS ON MAMMAL SPECIES HABITATS

1. OPOSSUM: Prefers woodland and stream habitats in farming areas. In New York State this species has been extending its range northward and is now found in part of the Champlain Valley. There are no records of this species inhabiting the Pigeon Lake Wilderness Area.

2. MASKED SHREW: Is found in forest, open country and brushland at any altitude. Populations are probably highest in the coniferous habitat.

3. LONGTAIL SHREW: Favor moist rocks and crevices between boulders in a fern covered habitat. This shrew is considered uncommon in New York State and it is unknown whether it inhabits the Pigeon Lake Wilderness Area. Longtail shrew distribution is being investigated by the NYSDEC Endangered Species Program.

4. NORTHERN WATER SHREW: Frequents wet places, often occurring along the shoreline of rushing mountain streams or the sphagnous swamps bordering beaver meadows.

5. SMOKY SHREW: This shrew is a creature of the cooler mountains and heavy forests.

6. SHORTTAIL SHREW: This shrew shows a preference for hardwood-type forest.

7. STARNOSE MOLE: This mole prefers the moist, rich, loamy soil near lakes and streams.

8. INDIANA MYOTIS: During winter, these bats hibernate in large groups in caves but during summer prefer to roost either singly or small groups in trees. There are now seven known colonies of the Indiana Bat in New York. None are found in the Pigeon Lake Wilderness Area. The Indiana Myotis is listed as endangered by the United States Federal Government and New York State.

9. SMALL-FOOTED MYOTIS: This species has a remarkable tolerance for cold, dry places and hibernates in caves where the temperature goes below freezing. The small-footed myotis is one of the rarest of eastern bats with only eight hibernation sites found in New York State. There are no records of this species in the Pigeon Lake Wilderness Area.

10. EASTERN PIPISTREL: This weak flying bat prefers to day-roost in trees but will migrate in order to find a suitable cave for winter hibernation. They favor warmer caves (52°-64°) with a high relative humidity. This species is common and widely distributed through all of New York State.

11. BIG BROWN BAT: It day-roosts mostly in buildings but hibernates in caves with a low temperature and a 100% relative humidity. This species usually migrates but not over long distances.

12. SILVER-HAIRED BAT: This slow flying bat is usually observed near streams. It is considered the most common bat of the Adirondacks. Most migrate south for winter.

13. RED BAT: This bat prefers wooded areas, where they usually fly in pairs, working the same route of about 100 yards over and over. Highly migratory, general southward movements.

14. SNOWSHOE HARE: It can be found in all habitats at any elevation but, usually most abundant in mixed deciduous-coniferous forest.

15. SOUTHERN FLYING SQUIRREL: This very common squirrel prefers large deciduous trees with holes in them, usually near water.

16. NORTHERN FLYING SQUIRREL: There have been only a few recorded sightings of the Northern Flying Squirrel in the Adirondacks and very little is known about this species. It prefers coniferous forest over other forests. Although it is likely to be found in the Pigeon Lake Wilderness Area it has not been confirmed.

17. WOODCHUCK: Prefers to den in or on the edge of fields during the summer but usually move to a woodland den site in the winter.

18. WHITEFOOTED MOUSE: Found in several habitats but wooded areas are preferred. This species is one of the most common mammals found in the Adirondack Park.

19. MUSKRAT: They are typically found in aquatic environments except in late February and early March when a large number migrate over land to find mates.

20. SOUTHERN BOG LEMMING: This species prefers low damp bogs and meadows with heavy growth of vegetation. It is listed as rare within the Adirondack Park by the Adirondack Park Agency.

21. WOODLAND JUMPING MOUSE: It is commonly found at the edge of a hardwood forest and water.

22. PORCUPINE: During most of the year it is found in numerous forest habitats where it feeds on buds, small twigs, and inner bark of most trees. In the winter, the porcupine prefers conifer forests where it feeds on evergreen tree foliage and bark.

23. MARTEN: The marten's preferred habitat is the mixed hardwood forest about 2,000 feet high. In New York State, this species' primary range is located in the High Peaks Wilderness Area but in recent years there is evidence that their range is expanding. There have been several reports of marten in the Pigeon Lake Wilderness Area (Mark Brown, personal communication).

24. FISHER: This valuable furbearer was once thought to favor remote areas in large forests of mixed softwood and hardwoods but New York fishers have adapted well to modern times. They are found outside such habitats in the Adirondack Mountains, and are occasionally seen near villages.

25. SKUNK: The skunk prefers semi-open country, while normally found within two miles of water.

REPTILES OF THE PIGEON LAKE WILDERNESS AREA

Chelyora serpentina	- Snapping Turtle
Chrysemys picta	- Painted Turtle
Clemmys insculpta	- Wood Turtle
Diadophis punctatus	- Ringneck Snake
Lampropeltis triangulum	- Milk Snake
Nerodia sipedon	- Northern Water Snake
Ophedorys vernalis	- Smooth Green Snake
Storeria dekayi	- Brown Snake
Storeria occipitomaculata	- Redbelly Snake
Thamnophis sauritus	- Eastern Ribbon Snake
Thamnophis sirtalis	- Common Garter Snake

AMPHIBIANS OF THE PIGEON LAKE WILDERNESS AREA

Ambystoma laterale	- Blue-Spotted Salamander
Ambystoma maculatum	- Spotted Salamander
Bufo americanus	- American Toad
Desmognathus fuscus	- Dusky Salamander
Desmognathus ochrophaeus	- Mt. Dusky Salamander
Eurycea bislineata	- Two-Lined Salamander
Gyrinophilus porphyriticus	- Spring Salamander
Hyla versicolor	- Gray Treefrog
Notophthalmus viridescens	- Red-Spotted Newt
Plethodon cinereus	- Redback Salamander
Rana catesbeiana	- Bullfrog
Rana clamitans	- Green Frog
Rana palustris	- Pickerel Frog
Rana septentrionalis	- Mink Frog
Rana sylvatica	- Wood Frog

APPENDIX 10

COMMENTS ON REPTILE AND AMPHIBIAN SPECIES HABITATS

1. WOOD TURTLE: This is New York State's most terrestrial turtle but often it utilizes streams and ponds for hibernating, mating, and aestivation. The wood turtle is listed as a completely protected non-endangered species.

2. RED-BELLIED SNAKE: This snake prefers moist woodland where they can be found under rocks, logs, leaves and lumber piles.

3. BROWN (DeKAY'S) SNAKE: Although a common snake in most of New York, the occurrence of this snake in the Pigeon Lake Wilderness Area is questionable. Several sources are in disagreement on whether it can be found here. There is no recent evidence the brown snake exists in the Area.

4. EASTERN RIBBON SNAKE: It is seldom found far from water. This species is rare in the Pigeon Lake Wilderness Area where it is at the northernmost limit of its range.

5. RED SPOTTED NEWT: It is found in nearly every pond and lake in New York State. During the Eft stage, the red spotted newt leaves its aquatic environment and for up to three years lives in moist woodlands at various altitudes. When mature, the Efts migrate back to the ponds and lakes to reproduce.

6. SPOTTED SALAMANDER: This salamander prefers habitats of deciduous and mixed forest where ponds, slow streams or temporary pools offer suitable breeding areas. There are no recent records of the spotted salamander existing in the Pigeon Lake Wilderness Area but historical records show the species was found in the vicinity of Raquette Lake. Because acid precipitation is adversely affecting the waters in which it breeds, this species was being considered for inclusion on either the threatened or endangered species list for New York State.

7. MOUNTAIN SALAMANDER: It prefers a moist, terrestrial habitat under logs, bark, stones and moss. In New York State, this species is common in the southern tier west of the Hudson River. Although there is an historical account of this species existing at Big Moose Lake next to the Pigeon Lake Wilderness Area, most knowledgeable sources consider the area to be north of its range.

8. RED-BACKED SALAMANDER: Most often found under logs and rocks in a damp deciduous forest, this amphibian can swim but never enters water voluntarily. It is one of the most common salamanders in the Adirondacks.

9. SPRING SALAMANDER: As the common name indicates, they are frequently found in or near springs or small streams. The adults are considered aquatic but are sometimes found under large rocks and logs in cool damp places. There are a few records of this species occurring in the Pigeon Lake Wilderness Area but generally this is at the northern limit of its range.

10. TWO-LINED SALAMANDER: This amphibian is found throughout the Pigeon Lake Wilderness Area under stones at the margin of cold streams.

11. GRAY TREE FROG: It feeds in relatively small trees and shrubs that are near or actually standing in shallow bodies of water. Its breeding habits may be adversely affected by acid precipitation.

12. MINK FROG: The mink frog prefers peaty or sphagnous lakes or ponds or in inlets or outlets of such lakes or ponds, particularly where water lilies are growing. The mink frog is found in the Tug Hill Plateau and Adirondacks and, hence, is a likely resident of the Pigeon Lake Wilderness Area.

13. WOOD FROG: Breeds in leaf-laden ponds and transient pools of woodlands; hibernates in logs, stumps, under stones or beneath boards near woods; never in water. It is suspected that acid precipitation in the Adirondack Mountains is adversely affecting the reproduction of this species (DEC Unpublished Mimeo).

APPENDIX 11

LIST OF CONTRIBUTORS FOR THE WILDLIFE INVENTORY

BARNETT, Tim, Elizabethtown, NY, Nature Conservancy.

BENSON, Dirck, Saranac Lake, NY, High Peaks Audubon Society.

BROWN, Mark, Warrensburg, NY, Conservation Biologist, New York State, Bureau of Wildlife.

CARLETON, Geoffrey, Elizabethtown, NY, High Peaks Audubon Society.

CARROL, Janet, Wildlife Resources Center, Delmar, NY, Bird Breeding Atlas Project.

CHASE, Greenleaf, Saranac Lake, NY, High Peaks Audubon Society.

CONNOR, Paul, Albany, NY, Mamalogy Department, NYS Museum.

GUTHRIE, Richard, New Baltimore, NY, Bird Breeding Atlas Project.

HICKS, Alan, Albany, NY, Conservation Biologist, Endangered Species Unit, Whildlife Resources Center, Delmar, NY.

HUGHES, Betty Ann, Ray Brook, NY, Adirondack Park Project Analyst, Adirondack Park Agency.

LA FRANCE, Ferdinand, Manlius, NY, Bird Breeding Atlas Project.

LAMPHEAR, Frank, Raquette Lake, NY, Conservation Officer, Region 5.

LEE, Gary, Inlet, NY, Forest Ranger, Region 5.

LOUCKS, Barbara, Feura Bush, NY, Assistant Research Scientist, Endangered Species Unit, Wildlife Resources Center, Delmar, NY.

MACK, Ted, Paul Smiths, NY, Paul Smiths College, Librarian.

MARLEAU, William, Big Moose, NY, NYS Forest Ranger.

McCHESNEY, Gary D., Raquette Lake, NY, NYS Forest Ranger.

McMARTIN, Barbara, Canada Lake, NY, Author of several guide books for hiking enthusiasts.

MILLER, Robert, Guilderland, NY, Associate Wildlife Biologist, Non-Game Unit, Wildlife Resources Center, Delmar, NY.

PETERSON, Mike, Elizabethtown, NY., High Peaks Audubon Society, Bird Breeding Atlas Project.

POUGH, Harvey, Cornell, NY, Associate Professor of Ecology, SUNY Cornell

RANDORF, Gary, Elizabethtown, NY, Executive Director, The Adirondack Council.

RIEXINGER, Patricia, Berne, NY, Conservation Biologist, Endangered Species Unit, Wildlife Resources Center, Delmar, NY.

RILEY, Dr. Edgar, Albany, NY, Curator of Zoology, NYS Museum.

APPENDIX 12

BREEDING BIRDS RECORDED IN ONE OR MORE BLOCKS
THAT INCLUDE THE PIGEON LAKE WILDERNESS AREA

Possible	Probable	Confirmed	
Green Heron	Barred Owl	Common Loon	Hermit Thrush
Blue-winged Teal	Great Horned Owl	Great Blue Heron	Veery
Wood Duck	Chimney Swift	American Bittern	Eastern Bluebird
Marsh Hawk	Pileated Woodpecker	Mallard	Golden-crowned Kinglet
Alder Flycatcher	Great Crested Flycatcher	Black Duck	Cedar Waxwing
Tufted Titmouse	Yellow-bellied Flycatcher	Hooded Merganser	Starling
Brown Thrasher	Eastern Wood Pewee	Common Merganser	Solitary Vireo
Ruby-crowned Kinglet	Olive-sided Flycatcher	Goshawk	Red-eyed Vireo
Bay-breasted Warbler	Wood Thrush	Sharp-shinned Hawk	Black-and-White Warbler
Louisiana Waterthrush	Swainson's Thrush	Red-tailed Hawk	Nashville Warbler
Mourning Warbler	Blackpoll Warbler	Red-shouldered Hawk	Northern Parula
Northern Oriole	Brown-headed Cowbird	Broad-winged Hawk	Magnolia Warbler
House Finch		Osprey	Black-throated Blue Warbler
Rufous-sided Towhee		Ruffed Grouse	Yellow-rumped Warbler
		Killdeer	Black-throated Green Warbler
		Common Snipe	Blackburnian Warbler
		Spotted Sandpiper	Chestnut-sided Warbler
		Herring Gull	Ovenbird
		Ruby-th. Hummingbird	Common Yellowthroat
		Belted Kingfisher	Canada Warbler
		Common Flicker	American Redstart
		Yellow-bellied Sapsucker	House Sparrow
		Hairy Woodpecker	Red-winged Blackbird
		Downy Woodpecker	Rusty Blackbird
		Black-backed Three-toed Woodpecker	Common Grackle
		Eastern Kingbird	Scarlet Tanager
		Eastern Phoebe	Cardinal
		Least Flycatcher	Rose-breasted Grosbeak
		Tree Swallow	Indigo Bunting
		Rough-winged Swallow	Evening Grosbeak
		Barn Swallow	Purple Finch
		Gray Jay	Pine Siskin
		Blue Jay	American Goldfinch
		Common Raven	Red Crossbill
		Common Crow	White-winged Crossbill
		Black-capped Chickadee	Dark-eyed Junco
		Boreal Chickadee	Chipping Sparrow
		White-breasted Nuthatch	White-throated Sparrow
		Red-breasted Nuthatch	Lincoln's Sparrow
		Brown Creeper	Swamp Sparrow
		House Wren	Song Sparrow
		Winter Wren	
		Gray Catbird	
		American Robin	

APPENDIX 13

ISSUES AFFECTING THE PIGEON LAKE WILDERNESS

1. Non-conforming uses
   a. Asphalt tennis court and remains of Cascade Lake Camp
2. Access acquisition - Twitchell Lake/Big Moose Lake areas
3. Marking of existing foot paths
4. Trail marking methods
5. Signing of trails - the addition or deletion of signing
6. Replacement of bridges and leantos
7. Designation of camping sites in heavy use areas
8. Pit privies - needs and form of privy
9. Removal of fish barrier dam at Cascade Lake
10. Posting all boundaries
11. Obtaining public use data for the area
12. Development of fire management and search and rescue policies for the area
13. The reintroduction of extirpated wildlife and fish species
14. Construction of new facilities (lean-tos, trails)
15. Acidification of lakes
16. Snowmobile trail location along Big Moose Road
17. Webb Covenant
18. Township 40
19. Group use

APPENDIX 14

14-12-7 (2/87)—9c

Identifying # N0002110116 SEQR
617.21

State Environmental Quality Review

NEGATIVE DECLARATION

Notice of Determination of Non-Significance

Project Number _____ Date September 8, 1992

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law.

The NYS Department of Environmental Conservation, as lead agency, has determined that the proposed action described below will not have a significant effect on the environment and a Draft Environmental Impact Statement will not be prepared.

Name of Action: Implementation of the Pigeon Lake Wilderness Unit Management Plan

SEQR Status: Type I [X]
Unlisted [ ]

Conditioned Negative Declaration: [ ] Yes
[X] No

Description of Action: SEE ATTACHED

Location: (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.)

The area is located on Forest Preserve lands in the Town of Webb, Herkimer County, and the Towns of Inlet and Long Lake, Hamilton County. A location map is attached.

Reasons Supporting This Determination:
(See 617.6(g) for requirements of this determination; see 617.6(h) for Conditioned Negative Declaration)

SEE ATTACHED

If Conditioned Negative Declaration, provide on attachment the specific mitigation measures imposed.

For Further Information:

Contact Person: Thomas Kapelewski, Senior Forester

Address: NYS Department of Environmental Conservation
Northville, NY 12134

Telephone Number: 518-863-4545

For Type I Actions and Conditioned Negative Declarations, a Copy of this Notice Sent to:

Commissioner, Department of Environmental Conservation, 50 Wolf Road, Albany, New York 12233-0001

Appropriate Regional Office of the Department of Environmental Conservation

Office of the Chief Executive Officer of the political subdivision in which the action will be principally located.

Applicant (if any)

Other involved agencies (if any)

APPENDIX 14

SEQR NEGATIVE DECLARATION - PIGEON LAKE WILDERNESS AREA

DESCRIPTION OF ACTION:

The Department of Environmental Conservation proposes to manage 51,100 acres of wilderness classified land in accordance with the definitions and guidelines set forth in the Adirondack Park State Land Master Plan. Article XIV of the NYS Constitution, Section 9 of the Environmental Conservation Law, opinions of several attorneys general and the State Land Master Plan provide the basis and authority for the proposed program actions. The plan identifies the constraints and issues affecting the unit and develops a series of goals and objectives which will govern the area's future management. The unit management plan will direct all management activities for a period of five years from the date of final adoption. Management activities planned for this unit include: boundary line surveying and marking, trail maintenance, minor facilities construction (trails, parking areas), facilities maintenance, fish stocking, reclamation, liming, fire suppression, search and rescue operations, research activities, public information and information, public use control systems, and patrolling and surveillance activities.

Specific projects include (See UMP for complete listing):

Snowmobile/Horse Trail - A marked trail of approximately 2 miles will be constructed utilizing old wagon roads parallel to the Big Moose Rd. This trail will be within 500 feet of the wilderness boundary and would help to eliminate the current safety problem of mixing snowmobiles, horses, auto's, and logging trucks on the public highway.

Cascade Trailhead - A 12 car parking area will be constructed north of the existing facility to provide adequate parking, facilitate winter plowing, and eliminate the current safety hazard of limited sight distance.

Ferd's Bog Parking Area and Trail - A 3 car parking area and 1/2 mile access trail is proposed for this popular observation area for bird species. A boardwalk at the trail terminus will enhance public appreciation of the bog while protecting the surface vegetation.

Shallow Lake Trail - Mark and maintain this popular 2.0 mile "herd path".

Norridge Connector Trail - A 2.5 mile connector trail will bypass private lands and locate this trail wholly on NYS lands.

Other Lands and Forests activities include trail register and pit privy placement, primitive tentsite designation, elimination of group camping permits, and brochure development.

Fisheries activities include:

1. Biological survey - Windfall Pond
2. Bathymetric surveys - Unnamed Pond B-P760, Pelchar Pond, Pigeon Lake, East Pond and Chub Lake.
3. Reclamation - Queer Lake and Cascade Lake (Construct barrier dams if necessary)
4. Liming - one or more ponds with suitable criteria; including Queer Lake if acidity levels are preventing successful reintroduction of native species.

REASONS SUPPORTING THIS DETERMINATION:

1. The area will be managed in accordance with wilderness guidelines established in the State Land Master Plan. These guidelines and various statutes have been developed to protect the resource and the wilderness characteristics of the area. All management activities proposed in the plan have also been addressed in various Programmatic Environmental Impact Statements. These include the final Programmatic Environmental Impact Statement for Forest Preserve Interior Recreation Program, ID# PS-13, November 9, 1981, and the final Programmatic Environmental Impact Statement, Acquisition of Lands by the Department of Environmental Conservation, March 1988.

2. Physical disturbance due to trailhead parking construction will be limited to tree cutting and gravel application. Public safety concerns will be enhanced by properly siting parking areas and provide for needed facilities where the public currently parks on private land or on the road shoulder. Prior to any site disturbance, an archaeological investigation will be undertaken in areas identified by the NYS Archaeological Site Locations Map. Physical disturbance in both new trail construction and existing trail maintenance will be controlled by culverts, waterbars, switchbacks or drainage ditches to mitigate soil erosion and compaction. Overall parking area development will be minor (less than 1/5 acre total) and is intended to provide safe and appropriate access to public land.

3. Removal of vegetation in the construction of the proposed combination snowmobile/horse trail will consist of less than 100 trees. The Cascade Trailhead construction will involve the removal of 30 trees. This activity will comply with all Department policies and restrictions on tree cutting in keeping with the "forever wild" requirements of the Constitution and wilderness management guidelines of the State Land Master Plan.

4. Public use will be enhanced but is not expected to increase as a result of management activities proposed in this plan. The relocation of specific trails and trailheads to State land will eliminate previous conflicts and trespassing on private lands. The DEC marking and maintaining of herd paths that currently receive significant public use (Ferd's Bog and Shallow Lake) will provide for safer use and prevent resource degradation. Site designation will restrict camping activity adjacent to trails and water. The disproportionate impacts of overnight use by large groups will be controlled by the phase-out of group camping permits over a two year period. Information boards will be erected at trailhead parking lots to convey the rules and regulations governing the use of forest preserve land and to instruct users in techniques for minimum impact camping, proper human sanitation, precautions concerning giardia, etc.

5. Critical plant and animal habitat has been identified within the unit and proposed actions have been sited to avoid these areas.

6. Pond reclamation, fish stocking, and liming will be a continuation of ongoing programs and is covered under the final Programmatic Environmental Impact Statement on Fish Species Management Activities ID# 000-5022, dated June 1980. A Final Generic Environmental Impact Statement on DEC Liming of Selected Acidified Waters was completed November 1990. The Commissioner's Organization and Delegation Memorandum #91-31, regarding Fishery management in Wilderness, Primitive, and Canoe Areas will be followed.

APPENDIX 15

TREE SPECIES OF THE PIGEON LAKE WILDERNESS

COMMON NAME	SCIENTIFIC NAME
White Pine	*Pinus strobus*
Red spruce	*Picea rubens*
Balsam fir	*Abies balsamea*
Eastern hemlock	*Tsuga canadensis*
Tamarack	*Larix laricina*
White Cedar	*Thuja occidentalis*
Black spruce	*Picea mariana*
Yellow birch	*Betula lutea*
White birch	*Betula papyrifera*
Sugar maple	*Acer saccharum*
American beech	*Fagus grandifolia*
Quaking aspen	*Populus tremuloides*
Red maple	*Acer rubrum*
Ironwood	*Ostrya virginiana*
Black cherry	*Prunus serotina*
Pin cherry	*Prunus pennsylvanica*
Willow	*Salix sp.*
Basswood	*Tilia americana*
American elm	*Ulmus americana*
Striped maple	*Acer pennsylvanicum*
White ash	*Fraxinum americana*
American hornbeam	*Carpinus caroliniana*
Choke cherry	*Prunus virginiana*
Big-tooth aspen	*Populus grandidentata*
Oak	*Quercus sp.*
Shadbush	*Amelanchier arborea*
Mountain ash	*Sorbus americana*

Inventory Code [1]	Covertype	Water Depth	Common Plants [2]
1	Wet Meadow	0-6"	None documented in the Pigeon Lake Wilderness Area on the wetland inventory.
2	Flooded Deciduous Trees	0-12"	American Elm (Ulmus americana), Silver Maple (Acer saccharinum), Green Ash (Fraxinus pennsylvanica), Black Ash (Fraxinus nigra), Willows (Salix spp.), Swamp White Oak (Quercus bicolor) and Red Maple (Acer rubrum)
3	Dead Flooded Trees	0-12"	Same as above.
4	Flooded Shrubs	0-6"	Alders (Alnus spp.), Willows (Salix spp.), Highbush Blueberries (Vaccinium corymbosum, V. atrococcum), Low Bush Cranberries (V. oxycoccus, V. macrocarpon), Sweet Gale (Myrica gale), Bog Rosemary (Andromeda glaucophylla), Buttonbush (Cephalanthus occidentalis, Leatherleaf (Chamaedaphne calyculata), and Dogwoods (Cornus spp.).
5	Emergents	0-3'	Arums (Araceae), Frog bits (Hydrocharitaceae), Pickerelweed (Pontederiaceae), Rushes (Juncaceae), Water Milfoils (Halcragaceae), Water Lilies (Nymphaeceae), Water Starwarts (Callitrichaceae), Bladderworts (Utricularia spp.), Bur-reeds (Sparganium spp.), Cattails (Typha spp.), Eelgrasses (Vallioneria spp.), Horsetails (Equisetum spp.), Pipeworts (Eriocaulon spp.), Smart weeds (Polygonum spp. Arrowheads (Sagittaria spp.), Bullrushes (Scirpus spp.), Spikerushes (Eleocharis spp.), Swamp Loosestrife (Decodon verticillatus), Arrow arum (Peltandra virginica), Wildrice (Zizania aquatica), Leatherleaf (Chamaedaphne calyculata), Sedges (Cyperaceae), Hydrophilic Grasses (Graminae), and Reed (Phragmitus communis).
8	Floating Vegetation	N/A	Duck weeds (Lemna spp.), Water Lilies (Nymphaeceae), Pond Weeds (Potomogeton spp.).
9	Open Water	Over 3'	Submergent vegetation may be present but not detected by aerial photo interpretation.

Inventory Code	Covertype	Water Depth	Common Plants
11	Bog Mat	0-3'	Peat Moss (Sphagnum spp.), Black Spruce (Picea mariana), American Larch (Larix laricina), Lowbush Cranberries (Vaccinium oxycoccus and V. macrocarpon), Laurels (Kalmia angustifolia and K. polifolia), Leatherleaf (Chamaedaphne calyculata), Labrador Tea (Ledum groenlandicum), Bog Rosemary (Andromeda glaucophylla), Azaleas (Rhododendron canadense and R. viscosum), Bog Aster (Aster nemoralis), Bog Cottongrass (Eriophorum spp.), Orchids (Arethusa spp.; Caboogon spp.; or Pogonia spp.), Pitcher Plant (Sarracenia purpurea) Sundews (Drosera spp.), Liverwort (Cladopodiella fluitans), Sedges (Carex spp.), Sweet Gale (Myrica gale), and Northern White Cedar (Thuja occidentalis).
12	Flooded Coniferous Trees	0-12"	Black Spruce (Picea mariana), American Larch (Larix laricina), Hemlock (Tsuga canadensis), White Cedar (Thuja occidentalis), Red Spruce (Picea rubens), and Balsam Fir (Abies balsamea).

[1] Code follows the numerical designation of covertype used by the Freshwater Wetland Inventory.

[2] Species list modified from Part 578, "Special Provisions Relating to Freshwater Wetlands." Rules and Regulations of the Adirondack Park Agency, 9NYCRR Subtitle Q.

APPENDIX 17

MUTUAL AGREEMENT BETWEEN DISTRICT 8 AND DISTRICT 10

This agreement covers first action by the District which has the best access to the fire. As soon as the Ranger or District Ranger arrives on the scene, the situation will be administered by the Ranger or District Ranger in whose district the fire lies. This agreement does not in any way affect the present arrangement whereby either district will assist on any fire in an adjacent district when circumstances are such as to warrant taking action until the Ranger in whose district the fire is located can arrive.

District 8 will take first action on State lands in the portion of Township 41, Hamilton County, described as beginning at the Hamilton County line running along the south line of Cascade Lake property, then diagonally across country to the southwest corner of Township 39; thence along west line of Township 39 to the corner; thence along north line of Township 41 to the Hamilton-Herkimer County lines. It is mutually understood that the District 8 Ranger at Big Moose will take initial action on a fire, after which District 10 will be notified and District 10 personnel will be dispatched to the fire. In case of a small fire which does not require sending a District 10 Ranger to the area, the Big Moose Ranger will submit the fire report through the District 8 office to the District 10 office.

In case of a timber trespass, the Big Moose Ranger will notify the Herkimer office who will in turn notify the Northville office. A stump count will be made by the Big Moose Ranger and a Ranger from District 10, provided a stump count has not already been made by the District 8 Ranger. Settlement of the trespass will be a coordinated effort with the primary responsibility belonging to District 10.

All trails and interior facilities in the aforementioned description will be maintained by District 8 personnel. Burning permits and camping permits, if any, will be issued by the District 8 Forest Ranger. Boundary line maintenance will be a coordinated effort by the appropriate rangers in District 8 and District 10.

This agreement has been agreed to by:

_____	_____	_____	_____
District Director, Dist. 8	Date	District Ranger, Dist. 8	Date
_____	_____	_____	_____
District Director, Dist. 10	Date	District Ranger, Dist. 10	Date

APPROVED: _____ _____
William D. Mulholland — Date
Director of Lands & Forests

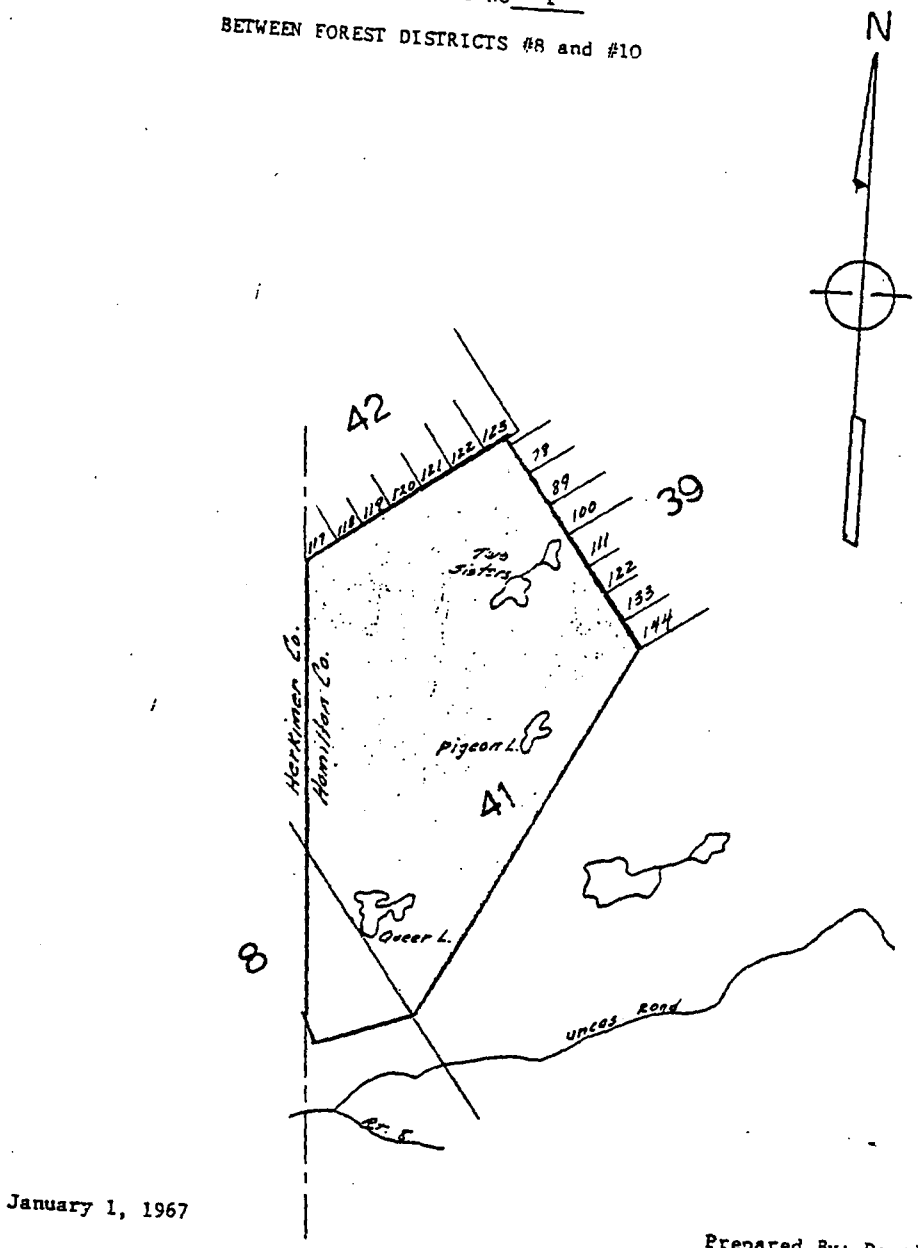
Agreement f1

SKETCH MAP

of

COOPERATIVE AGREEMENT NO 1

BETWEEN FOREST DISTRICTS #8 and #10



January 1, 1967

Prepared By: Donald Decker
District Ranger

First action taken by Dist #s

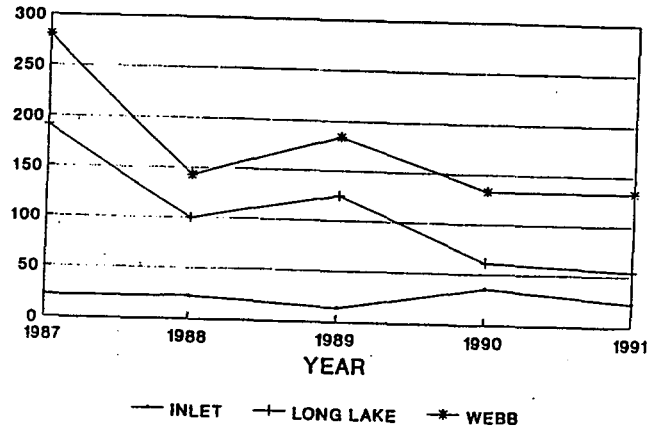
APPENDIX 18

HARVEST OF SIX FURBEARERS FROM 1987-88 TO 1991-92
IN TOWNS THAT INCLUDE THE PIGEON LAKE WILDERNESS AREA (1)

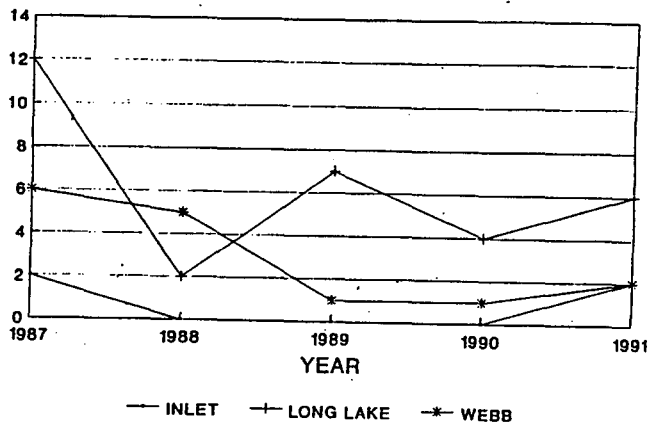
		Hamilton Co.		Herkimer Co.
	Year	Long Lake	Inlet	Webb
Beaver	1987-88	191	22	280
	1988-89	100	23	143
	1989-90	125	14	184
	1990-91	61	36	133
	1991-92	54	23	133
Bobcat	1987-88	12	2	6
	1988-89	2	0	5
	1989-90	7	0	1
	1990-91	4	0	1
	1991-92	6	2	2
Coyote	1987-88	8	2	7
	1988-89	4	1	6
	1989-90	5	0	7
	1990-91	3	0	4
	1991-92	4	1	1
Fisher	1987-88	25	0	25
	1988-89	6	0	17
	1989-90	12	0	11
	1990-91	4	1	5
	1991-92	4	0	3
Otter	1987-88	47	1	22
	1988-89	10	0	19
	1989-90	9	0	19
	1990-91	20	7	9
	1991-92	20	2	17
Marten	1987-88	11	*	*
	1988-89	0	*	*
	1989-90	3	0	0
	1990-91	7	0	0
	1991-92	0	0	0

(1) Harvest data from annual reports prepared for Pittman-Robertson projects W-126-R.

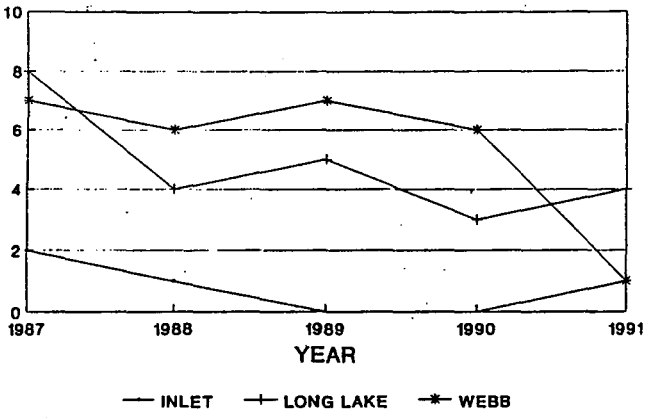
BEAVER TAKE



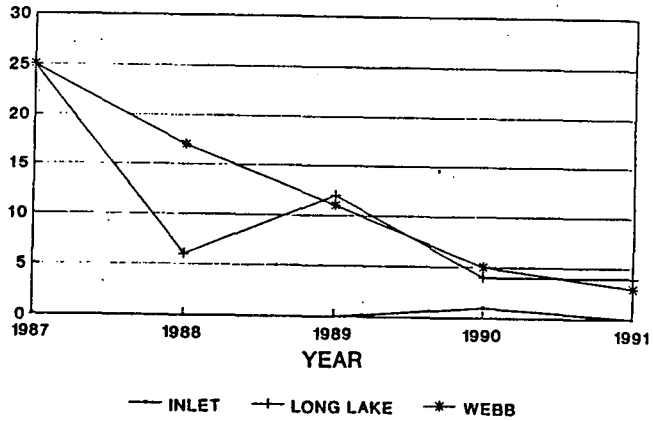
BOBCAT TAKE



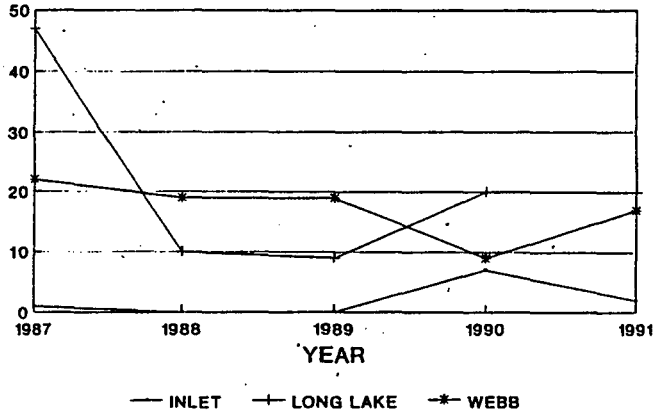
COYOTE TAKE



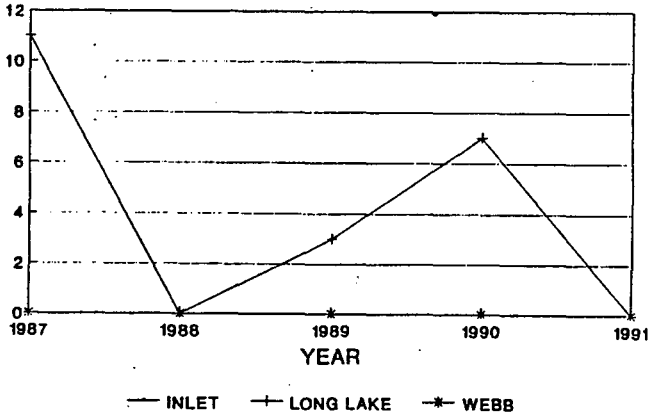
FISHER TAKE



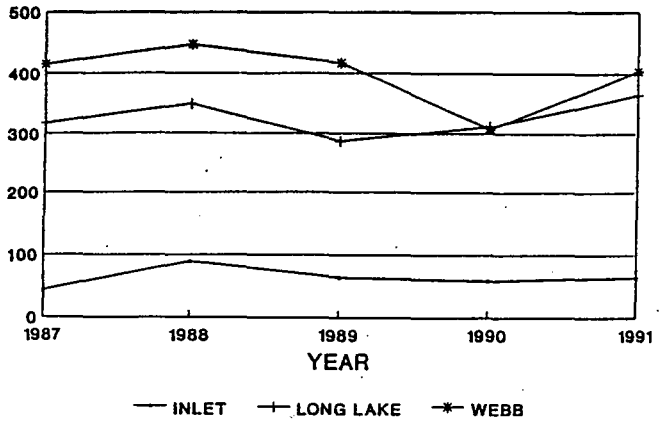
OTTER TAKE



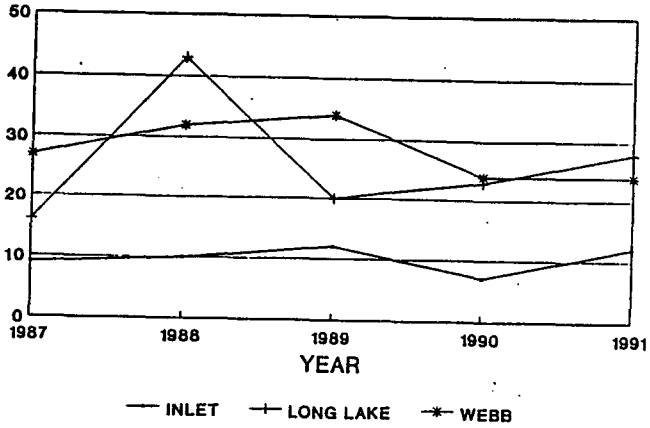
MARTEN TAKE



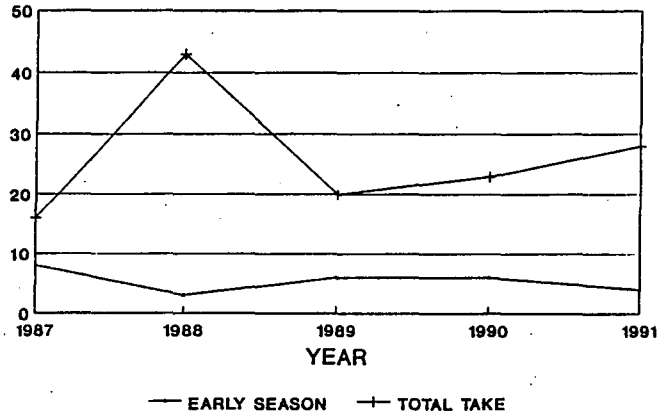
DEER TAKE BY TOWN



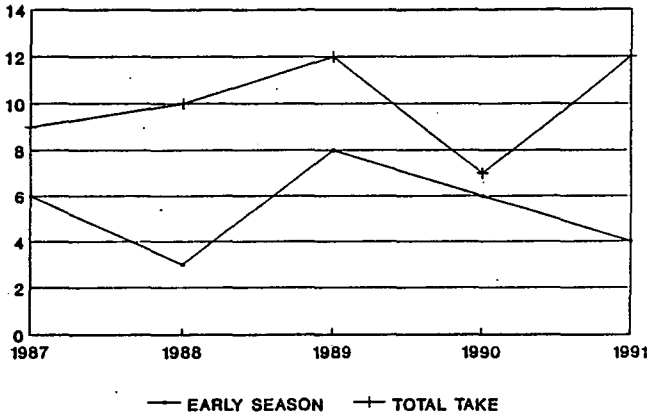
BEAR TAKE BY TOWN



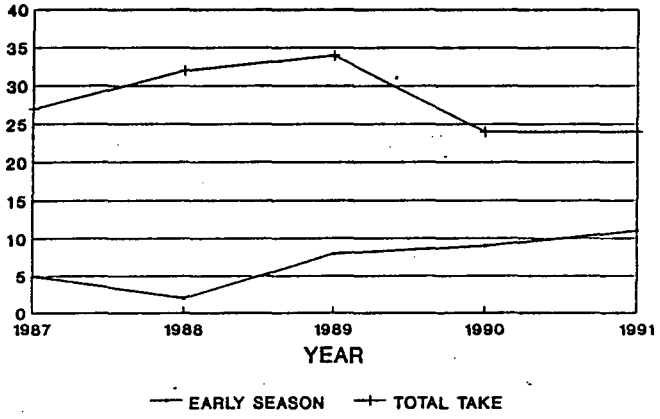
LONG LAKE BEAR TAKE



INLET BEAR TAKE



WEBB BEAR TAKE



MEMORANDUM FROM
THOMAS C. JORLING, *Commissioner*

New York State
Department of Environmental Conservation

October 31, 1991

TO: Executive Staff, Division and Regional Directors

FROM: Thomas C. Jorling

RE: ORGANIZATIONAL AND DELEGATION MEMORANDUM # 91-31
POLICY: FISHERY MANAGEMENT IN WILDERNESS, PRIMITIVE AND CANOE AREAS

BACKGROUND

Fisheries management in wilderness, primitive and canoe areas of the Adirondack and Catskill Parks has a strong foundation in law, policy, tradition and resource planning. The New York State Legislature has directed DEC to efficiently manage, maintain and improve the fish resources of the State and make them accessible to the people of New York. This includes a mandate to develop and carry out programs and procedures which prompt both natural propagation and maintenance of desirable species in ecological balance and lead to the observance of sound management practices to achieve those goals (ECL Section 11-0303).

Similarly, the State Land Master Plans for the Adirondack and Catskill Parks adopt the principle of resource management and provide strong guidance for fish management (APA 1987, DEC 1985). The primary management guideline for wilderness, primitive and canoe areas is to "achieve and perpetuate a natural plant and animal community where man's influence is not apparent." While these plans recognize these areas as places "where the earth and its community of life are untrammeled by man, where man is a visitor who does not remain," they are also defined as areas which are protected and managed so as to "preserve, enhance and restore, where necessary, its natural conditions...". Thus, opportunities to manage ecosystems have been preserved in these Master Plans and are conducted in a manner to meet plan guidelines. Fish management practices, such as fish stocking, pond reclamation, pond liming, barrier dam construction and maintenance, and resource survey and inventory, are permitted when conducted within guidelines for wilderness, primitive and canoe area management and use.

For more than a decade, the Division of Fish and Wildlife has managed ecosystems consistent with legal mandates and professional concerns, with sensitivity for wilderness values and with the intent of providing unique recreational experiences. The Master Plans set no numerical standards on use intensity but indicate that fishing is "compatible with wilderness and should be encouraged as long as the degree and intensity of use does not endanger the wilderness resource itself."

Copy Bureaus

OCT 31 1991

1. The primary purpose of aquatic resource management in wilderness primitive and canoe areas is to perpetuate natural aquatic ecosystems, including perpetuation of indigenous fish species on a self-sustaining basis.

2. Angling is recognized as a compatible recreational pursuit in wilderness, primitive and canoe areas. Aquatic resource management will emphasize the quality of the angling experience over quantity of use.

3. Aquatic resources in wilderness, primitive and canoe areas will be protected and managed so as to preserve, enhance and restore, where necessary, their natural conditions. Aquatic resource management, including stocking of game and nongame fishes and pond reclamation, may be necessary to achieve and perpetuate natural aquatic ecosystems.

4. Brown trout, rainbow trout, splake and landlocked Atlantic salmon are coldwater fish species historically associated with the Adirondack Park. Smallmouth bass, largemouth bass, northern pike and walleye are warmwater species historically associated with the entire Adirondack and Catskill Parks and indigenous to some lowland areas. These species may be included in the management and stocking regime of specific waters in wilderness, primitive, and canoe areas in instances when indigenous fish communities cannot be protected, maintained, or restored in those waters. Fish species, other than indigenous species and species historically associated with the Adirondack and Catskill Parks, will not be stocked in the waters of wilderness, primitive and canoe areas.

5. Waters found to be naturally barren of fish species will not be stocked. Waters which are self-sustaining or which otherwise would be self-sustaining except that they have been compromised by human-caused disturbances may be stocked consistent with these guidelines.

6. Pond reclamation will be practiced as appropriate to prepare or maintain waters in wilderness, primitive and canoe areas but only for the restoration or perpetuation of indigenous fish communities.

7. The Unit Management Plan for each wilderness, primitive, or canoe area shall identify aquatic resource management actions on a water-body-specific basis through analysis of unit inventory data adequate to support the actions.

8. In those instances where a Unit Management Plan has not yet been approved for a given wilderness, primitive, or canoe area, aquatic resource management actions to stock waters may be continued in waters so managed before December 31, 1989, consistent with these guidelines, pending approval of the Plan. Waters reclaimed prior to December 31, 1989 may be reclaimed subject to case-by-case review by the Adirondack Park Agency for consistency with these guidelines, pending approval of the Plan. New waters may be stocked or reclaimed only to prevent significant resource degradation subject to case-by-case review by the Adirondack Park Agency for consistency with these guidelines, pending approval of the Plan.

9. Maintenance liming to protect and maintain indigenous fish species may be continued as mitigation measure for acid rain in Horn Lake (P04854), Tamarack Pond (P06171), Livingston Pond (P05705) and Kitfox Pond (P03142) so treated before December 31, 1989. Upon acceptance of the Final Generic Environmental Impact Statement on liming and the issuance of findings and a decision by the Department of Environmental Conservation, the appropriateness of liming in the waters of wilderness, primitive and canoe areas will be established and appropriate policy guidelines incorporated herein.

10. All aquatic resource management activities in wilderness, primitive, and canoe areas will be consistent with guidelines for use of motor vehicles motorized equipment, and aircraft as stated in the State Land Master Plan.

Attachment

APPENDIX 20

SNOWMOBILE TRAIL STANDARDS*
(Class A)

TRAIL CLASSIFICATIONS

Class A Trails are those that are major travel routes, which provide physical features that permit grooming if deemed desirable and,

1. Follow old roadways; or,
2. Connect with groomed trail systems on adjacent public or private lands; or,
3. Join with other trails on State land to form a long loop or other major travel corridor.

ALIGNMENT AND GRADE

1. Trail alignment shall avoid blind curves and abrupt changes in either horizontal or vertical direction.
2. Minimum sight distance shall be 50 feet.
3. Curves with a radius of less than 25 feet shall not be included in any trail alignment.
4. Grades shall not exceed 20%.
5. Line and grade shall be designed so as to insure that the average snowmobile operator can safely negotiate the trail with little or no difficulty and experience a ride that is interesting and safe.

TRAIL WIDTH

Class A trails may be kept clear to a width of eight feet on straight or gently curved stretches of trail and to a width of twelve feet on curves and steep grades where the cutting of trees or other woody growth of over three inches DBH is not necessary.

All trails, regardless of class, shall be kept clear to a height of twelve feet, as measured from ground level, where the cutting of trees or other woody growth of over three inches DBH is not necessary

*Condensed from 1986 NYSDEC Forest Preserve Policy Manual

APPENDIX 21

The following inventory includes all the structures on those trails maintained by Region 6, Herkimer. The only exception is the trail from Pigeon Lake to West Mountain to the Brown's Tract Road.

Norridge Trail

2 small bridges - 10'

West Mountain Trail

7 bridges - average length, 12'
Constable Creek - 25' truss

Mays Pond Trail

1 bridge - 12'

Windfall Pond Trail

5 bridges - 2 each, 15'; 3 each, 12'

Russian Lake Trail

1 bridge - 10'

Andes Creek Trail

1 bridge 3'x4' w/handrail - plank

Big Moose-Gull Lake Trail

2 bridges - 12' average length

Cascade-Queer Lake Trail

3 bridges - 12' average length

Queer Lake-Chub Lake Trail

1 bridge - 25' inlet

Queer Lake-Windfall Pond Trail

3 bridges - 10' average length

Sister Lake Trail

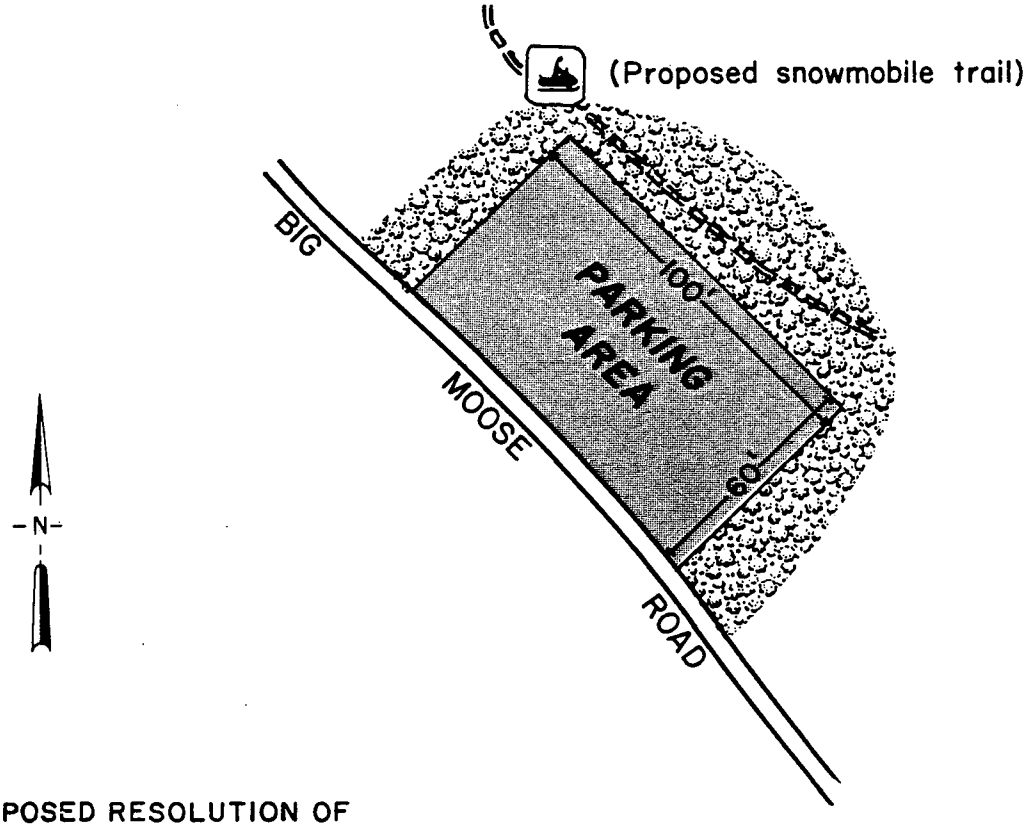
180' elevated dry tread ripped pine plank

APPENDIX 22

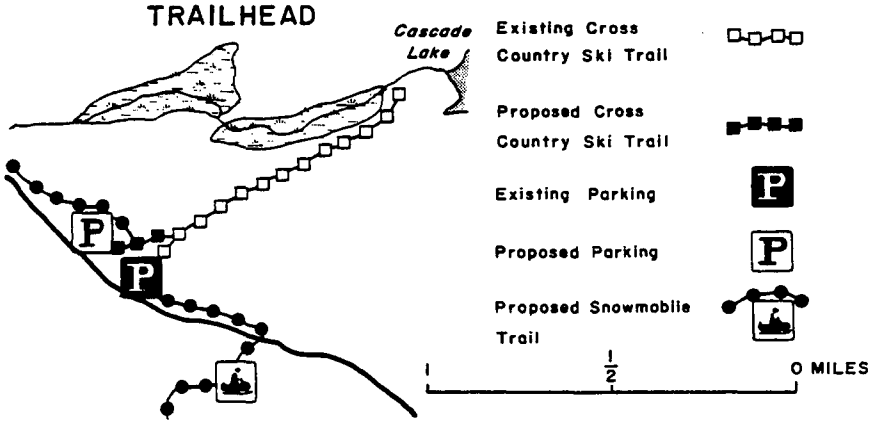
CASCADE LAKE TRAILHEAD WORK PLAN

TOWNSHIP 8 JOHN BROWN'S TRACT

PARCEL K TOWN OF WEBB



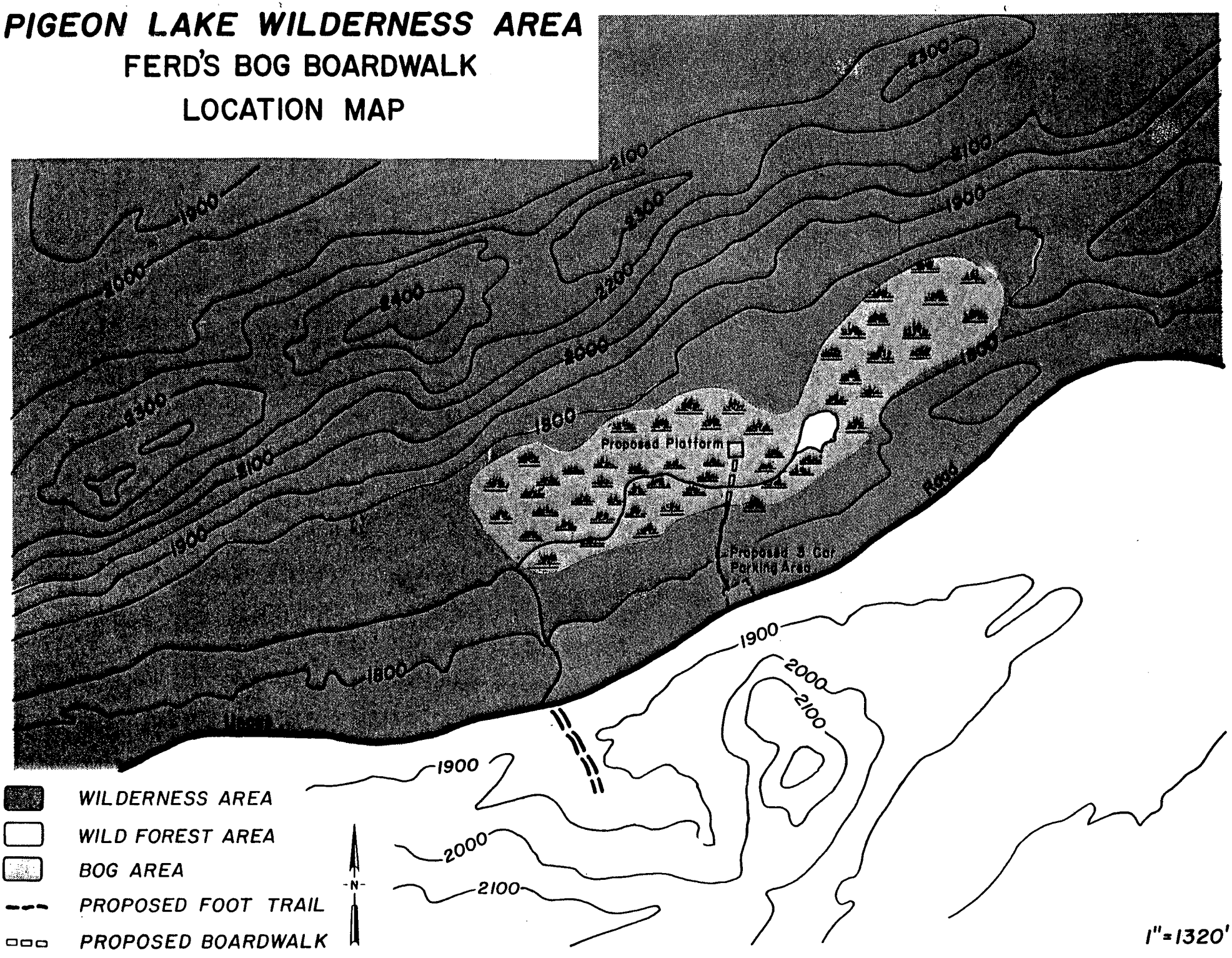
PROPOSED RESOLUTION OF
CASCADE LAKE
TRAILHEAD



PIGEON LAKE WILDERNESS AREA

FERD'S BOG BOARDWALK

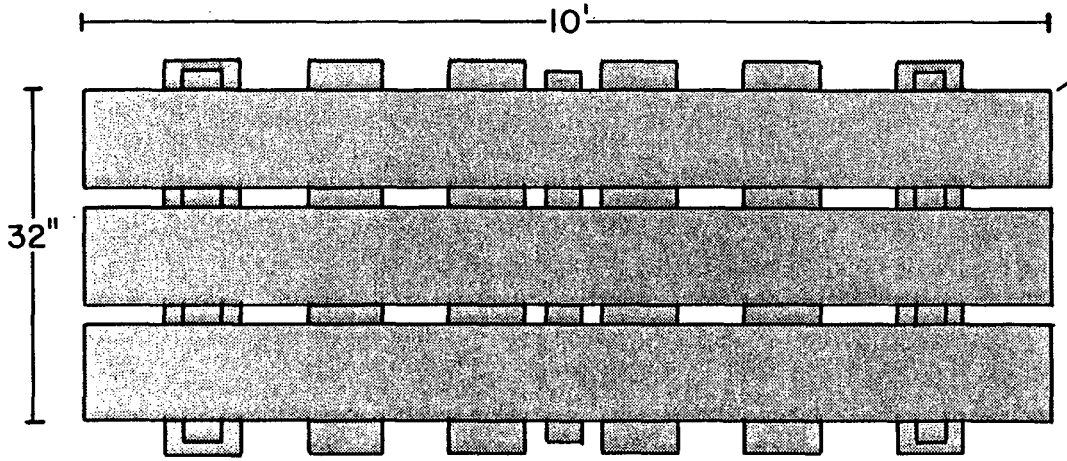
LOCATION MAP

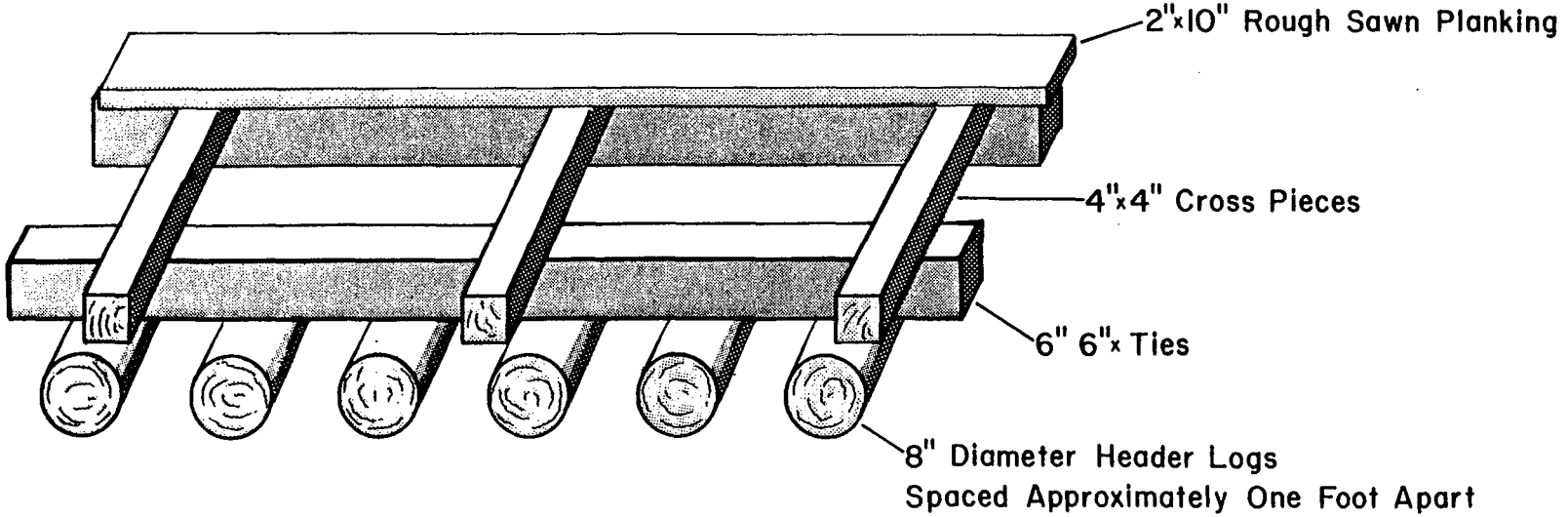


APPENDIX 23

PIGEON LAKE WILDERNESS AREA

FERDS BOG BOARDWALK

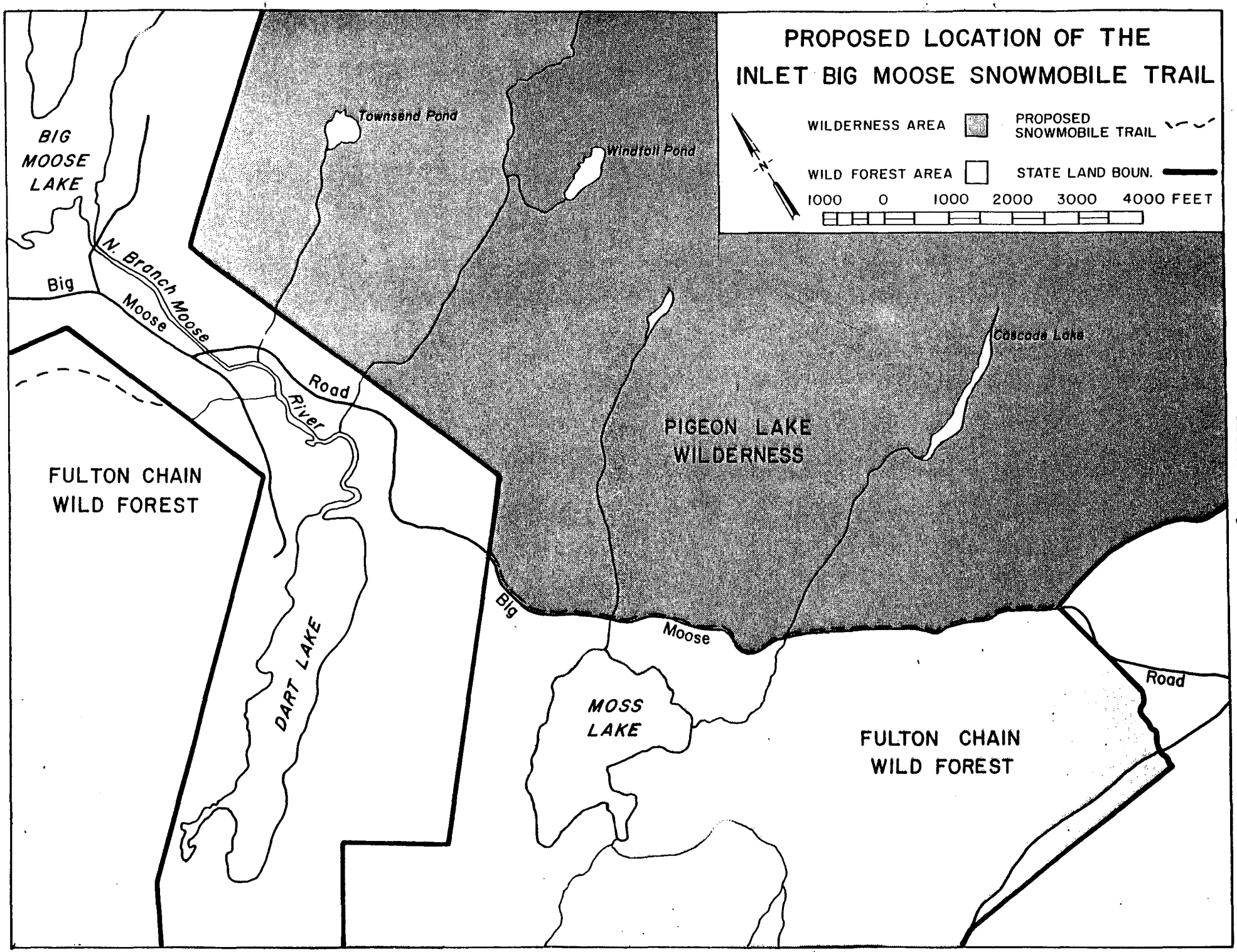




1"=2'

TOTAL LENGTH - 50-10' SECTIONS = 500 FEET

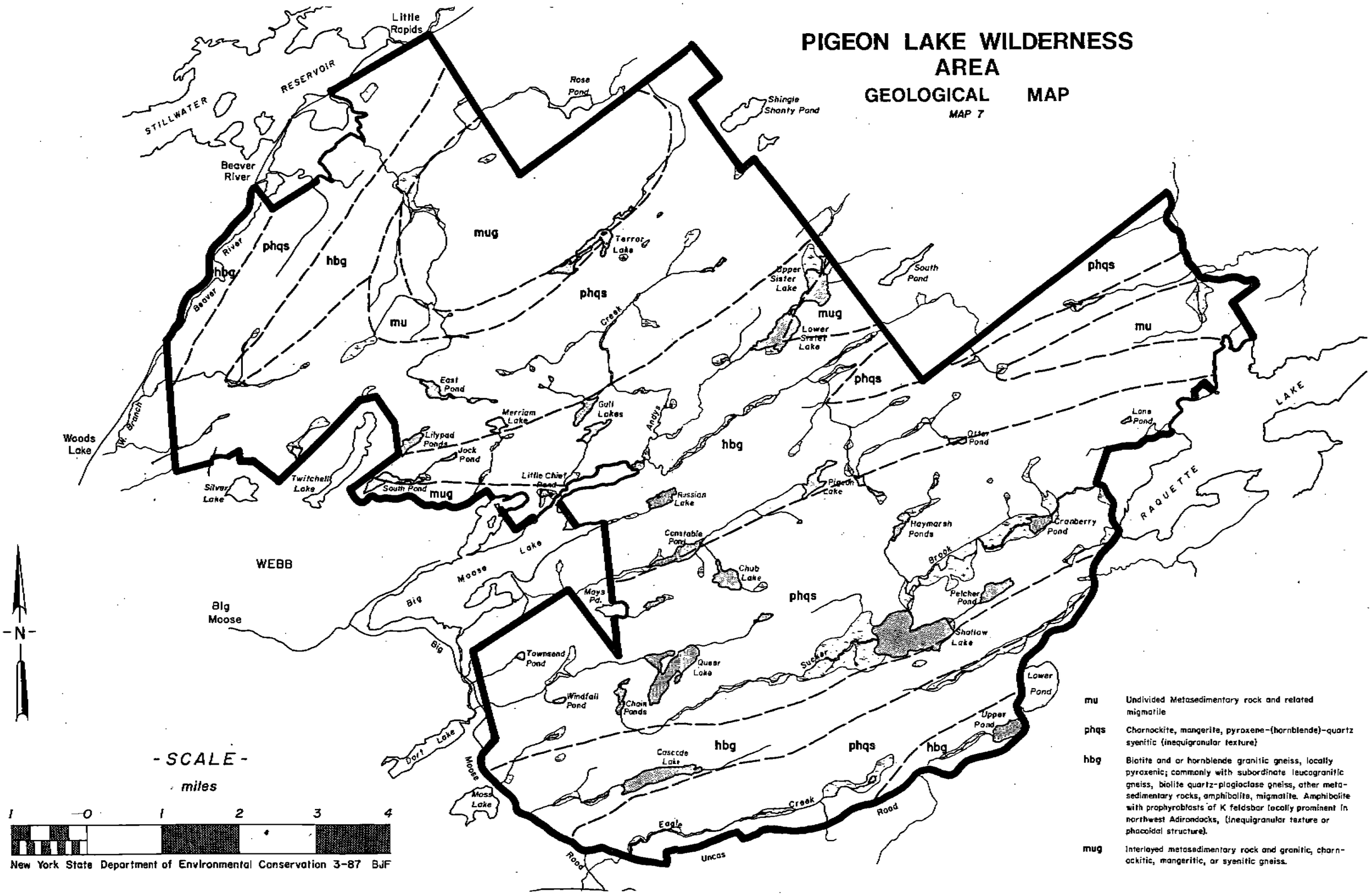
APPENDIX 24


PROPOSED LOCATION OF THE
INLET BIG MOOSE SNOWMOBILE TRAIL
WILDERNESS AREA
PROPOSED SNOWMOBILE TRAIL
WILD FOREST AREA
STATE LAND BOUN.
1000 0 1000 2000 3000 4000 FEET
N
Townsend Pond
Windfall Pond
BIG MOOSE LAKE
N. Branch Moose
Big Moose
River
Road
Cascade Lake
PIGEON LAKE WILDERNESS
FULTON CHAIN WILD FOREST
DART LAKE
Big Moose
MOSS LAKE
Road
FULTON CHAIN WILD FOREST

PIGEON LAKE WILDERNESS AREA

GEOLOGICAL MAP

MAP 7



mu	Undivided Metasedimentary rock and related migmatite
phqs	Charnockite, mangerite, pyroxene-(hornblende)-quartz syenitic (inequigranular texture)
hbg	Biotite and or hornblende granitic gneiss, locally pyroxenic; commonly with subordinate leucogranitic gneiss, biotite quartz-plagioclase gneiss, other metasedimentary rocks, amphibolite, migmatite. Amphibolite with prophyroblasts of K feldsbar locally prominent in northwest Adirondacks, (inequigranular texture or phacoidal structure).
mug	Interlayed metasedimentary rock and granitic, charnockitic, mangeritic, or syenitic gneiss.

PIGEON LAKE WILDERNESS AREA

MAP I

- SCALE -

miles

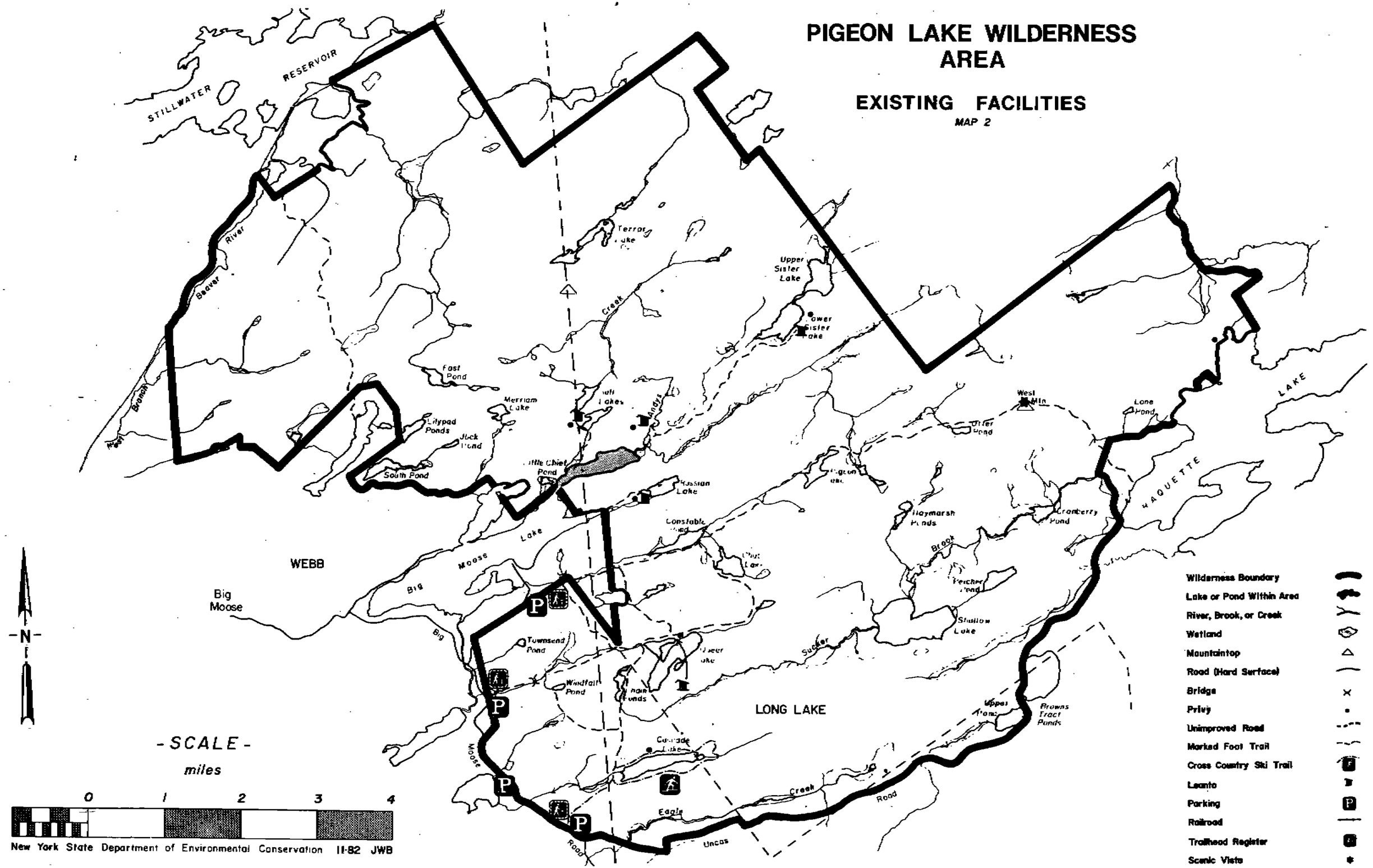
1 0 1 2 3 4

New York State Department of Environmental Conservation 3-87 BJF

PIGEON LAKE WILDERNESS AREA

EXISTING FACILITIES

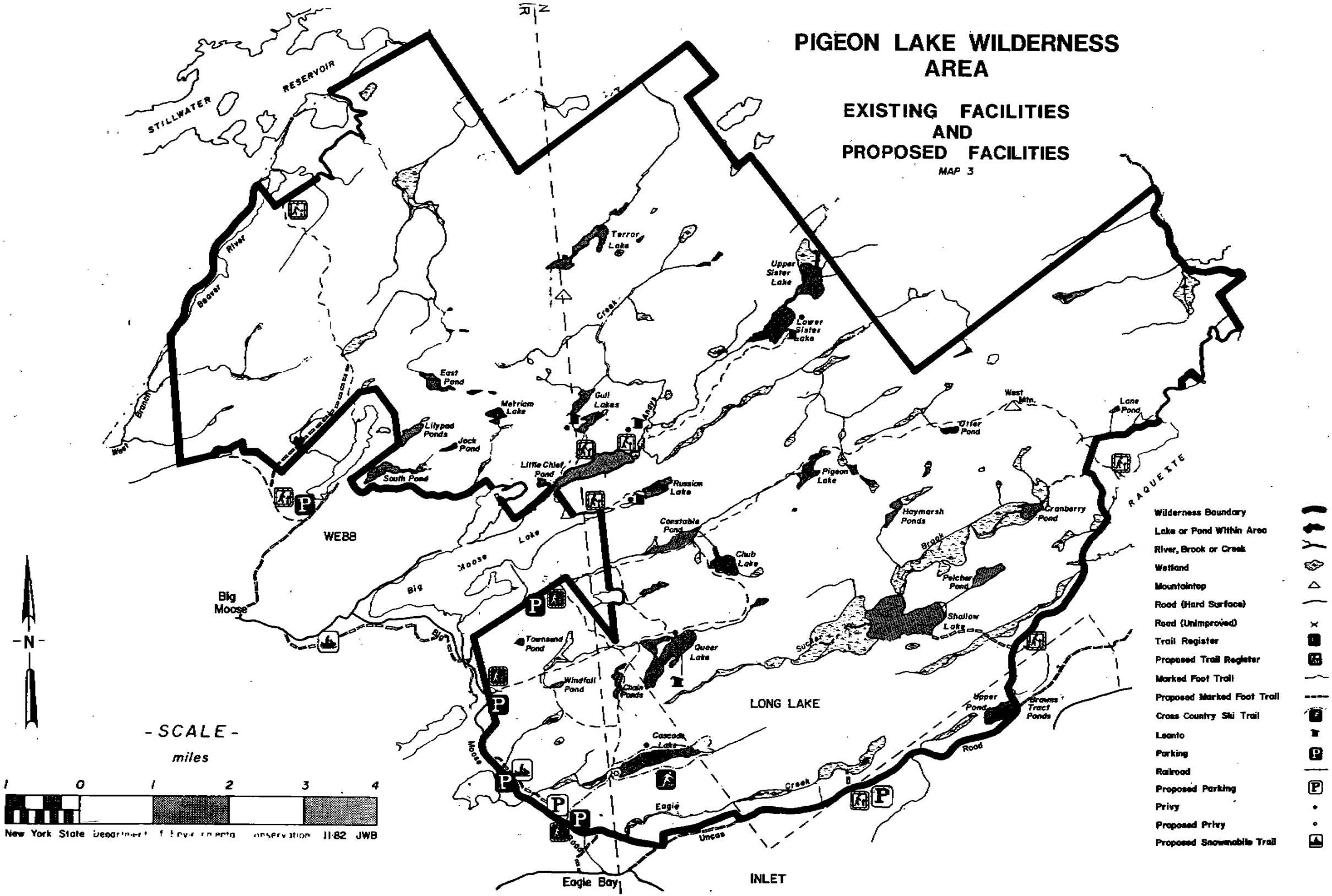
MAP 2



PIGEON LAKE WILDERNESS AREA

EXISTING FACILITIES AND PROPOSED FACILITIES

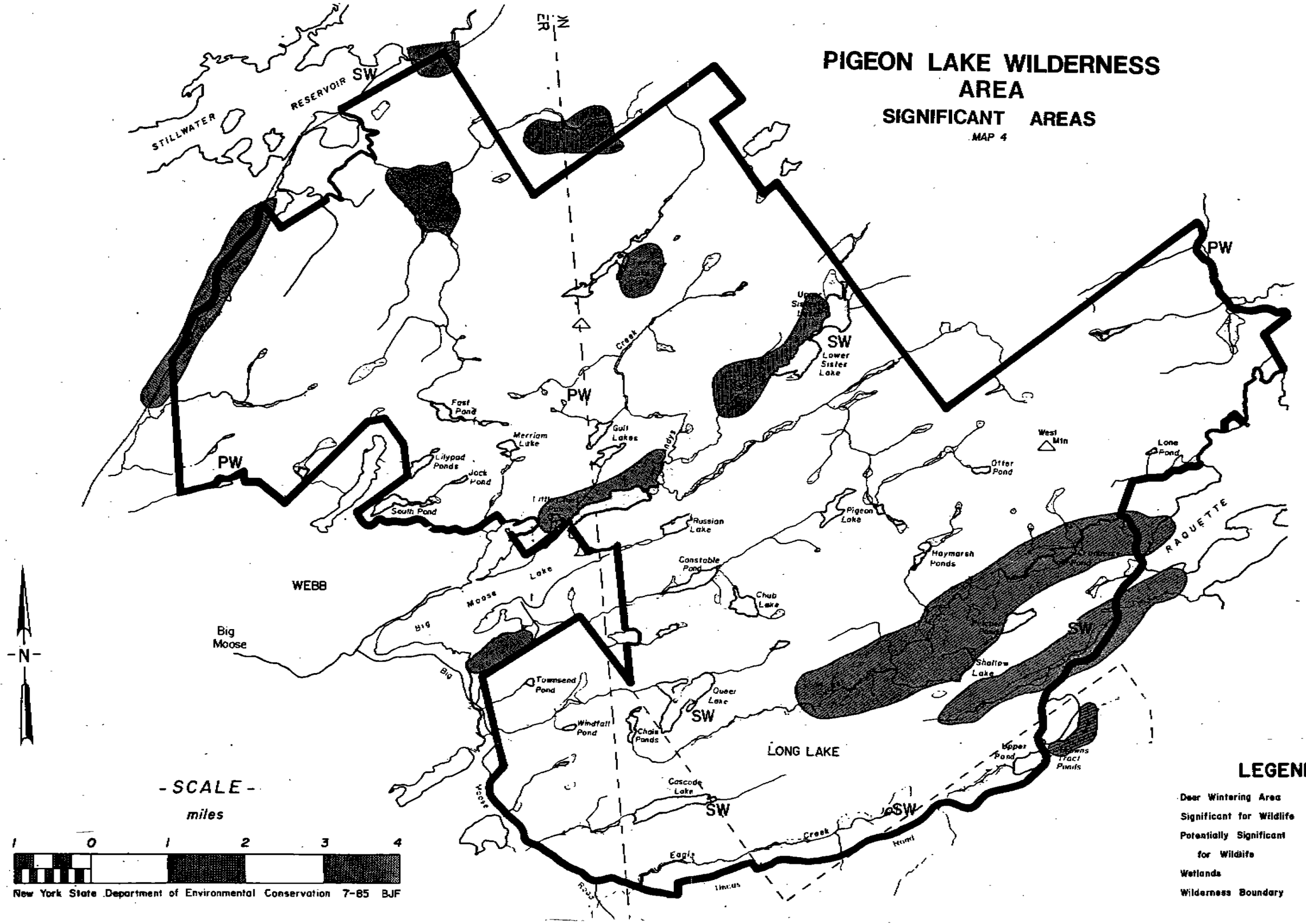
MAP 3



PIGEON LAKE WILDERNESS AREA

SIGNIFICANT AREAS

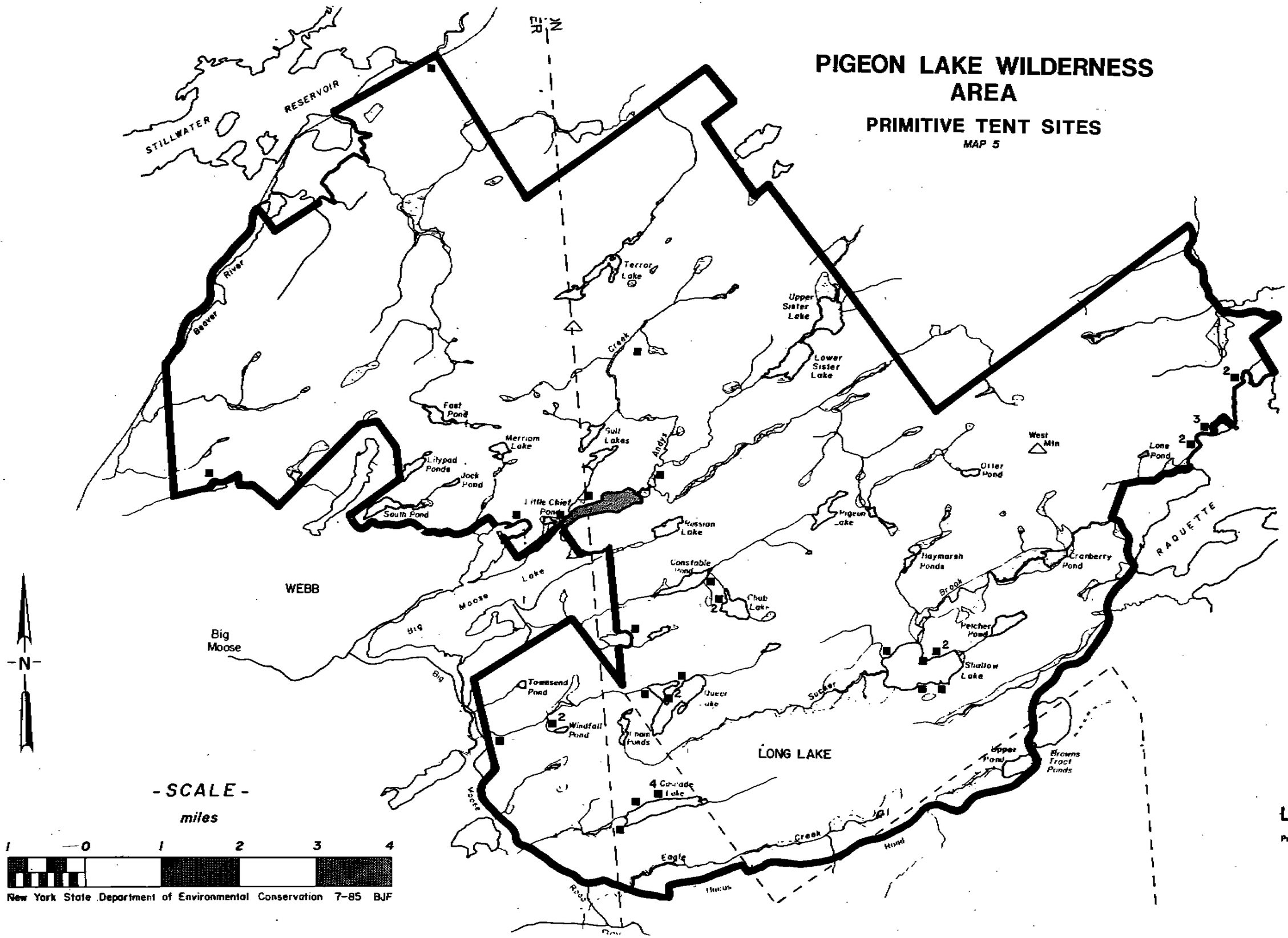
MAP 4



PIGEON LAKE WILDERNESS AREA

PRIMITIVE TENT SITES

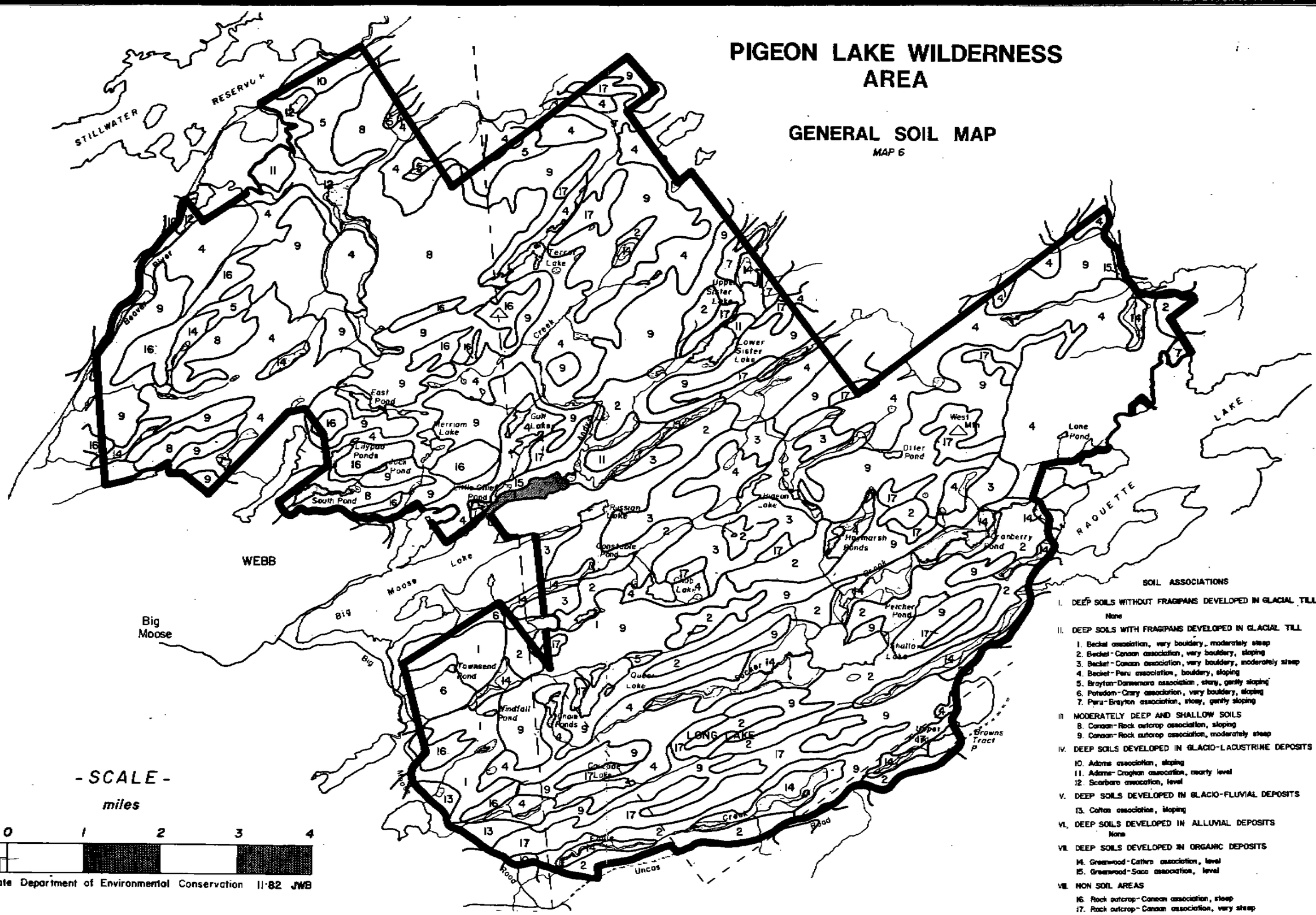
MAP 5



PIGEON LAKE WILDERNESS AREA

GENERAL SOIL MAP

MAP 6



New York State Department of Environmental Conservation 11·82 JWB

SOIL ASSOCIATIONS

I. DEEP SOILS WITHOUT FRAGIPANS DEVELOPED IN GLACIAL TILL

None

II. DEEP SOILS WITH FRAGIPANS DEVELOPED IN GLACIAL TILL

1. Becket association, very bouldery, moderately steep
2. Becket-Canaan association, very bouldery, sloping
3. Becket-Canaan association, very bouldery, moderately steep
4. Becket-Peru association, bouldery, sloping
5. Brayton-Dansmore association, stony, gently sloping
6. Potsdam-Crary association, very bouldery, sloping
7. Peru-Brayton association, stony, gently sloping

III MODERATELY DEEP AND SHALLOW SOILS

8. Canaan-Rock outcrop association, sloping
9. Canaan-Rock outcrop association, moderately steep

IV. DEEP SOILS DEVELOPED IN GLACIO-LACUSTRINE DEPOSITS

10. Adams association, sloping
11. Adams-Croghan association, nearly level
12. Scarboro association, level

V. DEEP SOILS DEVELOPED IN GLACIO-FLUVIAL DEPOSITS

13. Colton association, sloping

VI. DEEP SOILS DEVELOPED IN ALLUVIAL DEPOSITS

None

VII. DEEP SOILS DEVELOPED IN ORGANIC DEPOSITS

14. Greenwood-Cathro association, level
15. Greenwood-Saco association, level

VIII. NON SOIL AREAS

16. Rock outcrop-Canaan association, steep
17. Rock outcrop-Canaan association, very steep

PIGEON LAKE WILDERNESS AREA

GEOLOGICAL MAP

MAP 7

Little Rapids
RESERVOIR
STILLWATER
Rose Pond
Shingle Shanty Pond
Beaver River
Beaver River
phqs
hbg
hbg
mug
mu
Terror Lake
phqs
Creek
Upper Sister Lake
South Pond
mug
Lower Sister Lake
phqs
mu
East Pond
Merriam Lake
Gull Lakes
Ardys
hbg
Lily pad Ponds
Jock Pond
Little Chief Pond
Woods Lake
W. Branch
Silver Lake
Twitchell Lake
South Pond
mug
Russian Lake
Pigeon Lake
Otter Pond
Lone Pond
LAKE
RAQUETTE
Haymarsh Ponds
Cranberry Pond
Brook
Constable Pond
Chub Lake
Mays Pd.
phqs
Peicher Pond
Shallow Lake
WEBB
Big Moose
Lake
Moose
Big
Big
Townsend Pond
Queer Lake
Sucker
Lower Pond
Windfall Pond
Chain Ponds
Upper Pond
Dart Lake
hbg
phqs
hbg
Cascade Lake
Moose
Moss Lake
Creek
Eagle
Road
Uncas
Road

-N-

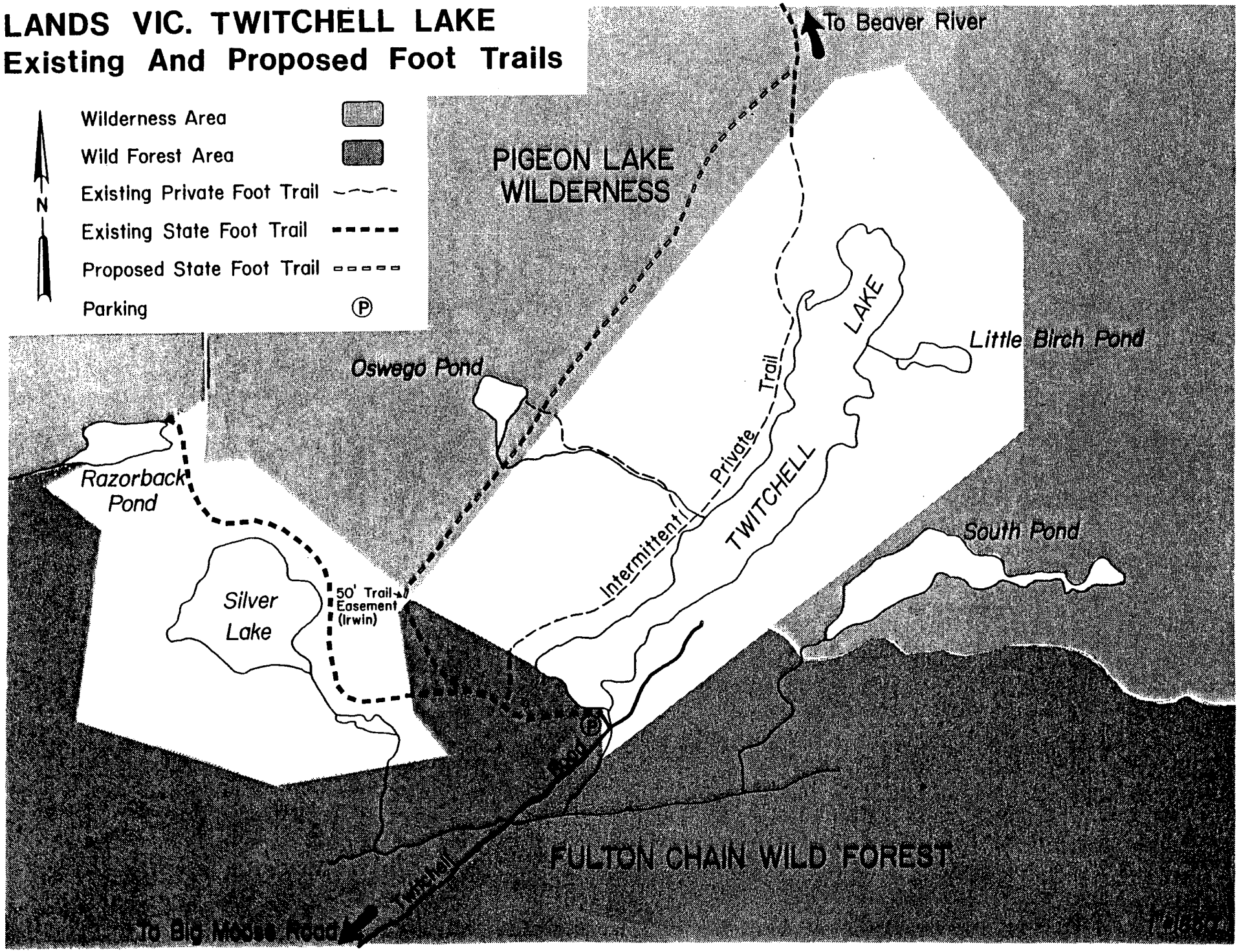
- SCALE -

miles

1 0 1 2 3 4

New York State Department of Environmental Conservation 3-87 BJF

mu	Undivided Metasedimentary rock and related migmatite
phqs	Charnockite, mangerite, pyroxene-(hornblende)-quartz syenitic (inequigranular texture)
hbg	Biotite and or hornblende granitic gneiss, locally pyroxenic; commonly with subordinate leucogranitic gneiss, biotite quartz-plagioclase gneiss, other metasedimentary rocks, amphibolite, migmatite. Amphibolite with prophyroblasts of K feldsbar locally prominent in northwest Adirondacks, (inequigranular texture or phacoidal structure).
mug	Interlayed metasedimentary rock and granitic, charnockitic, mangeritic, or syenitic gneiss.


LANDS VIC. TWITCHELL LAKE
Existing And Proposed Foot Trails
Wilderness Area
Wild Forest Area
Existing Private Foot Trail
Existing State Foot Trail
Proposed State Foot Trail
Parking
N
To Beaver River
PIGEON LAKE WILDERNESS
Oswego Pond
Little Birch Pond
LAKE
Trail
Private
TWITCHELL
Intermittent
South Pond
Razorback Pond
Silver Lake
50' Trail Easement (Irwin)
FULTON CHAIN WILD FOREST
To Big Moose Road