United States Department of Agriculture
Forest Service
Washington Office
14th & Independence SW
P.O. Box 96090
Washington, DC 20090-6090

Reply To: 4060-3

Date: February 28, 1991

Floyd Marita
Regional Forester
USDA, Forest Service
Region 9 - Eastern Region
310 W. Wisconsin Avenue, Rm 500
Milwaukee, WI 53203

Dear Dr. Marita:

Enclosed is the approved signed Decision Notice/Designation Order and Establishment Record for Tucker Lake Research Natural Area Within Chequamegon National Forest, Price County, Wisconsin.

Sincerely,

STANLEY L. KRUGMAN, Director
Forest Management Research

Enclosure

RECEIVED

DECISION NOTICE/DESIGNATION ORDER

By virtue of the authority vested in me by the Secretary of Agriculture under regulations 7 CFR 2.42 , 36 CFR 251.23, and 36 CFR Part 219, I hereby establish the Tucker Lake Hemlocks Research Natural Area. It shall be comprised of lands described in the section of the Establishment Record entitled "Location".

1) The Regional Forester, Floyd J. Marita, recommended the establishment of this Research Natural Area in the Record of Decision for the Chequamegon National Forest Land and Resource Management Plan. That recommendation was the result of an analysis of the factors listed in 36 CFR 219.25 and Forest Service Manual 4063.41. Results of the Regional Forester's analysis are documented in the Chequamegon National Forest Land and Resource Management Plan and Final Environmental Impact Statement which are available to the public.

2) The Tucker Lake Hemlocks Research Natural Area will be managed in compliance with all relevant laws, regulations, and Forest Service Manual direction regarding Research Natural Areas. It will be administered in accordance with the management direction/prescription identified in the Establishment Record.

3) The Chequamegon National Forest Land and Resource Management Plan is hereby amended to be consistent with the management direction identified in the Establishment Record and this Decision Notice/Designation Order. This is a non-significant amendment of the Chequamegon National Forest Land and Resource Management Plan (36 CFR 219.10(f).

The Forest Supervisor of the Chequamegon National Forest shall notify the public of this decision and mail a copy of the Decision Notice/Designation Order and amended direction to all persons on the Chequamegon Land and Resource Management Plan mailing list.

Based on the Environmental Analysis, I find that designation of the Tucker Lake Hemlocks Research Natural Area is not a major Federal action significantly affecting the quality of the human environment. (40 CFR 1508.27)

This decision is subject to appeal pursuant to 36 CFR Part 217. A Notice of Appeal must be in writing and submitted to:

The Secretary of Agriculture
14th & Independence Ave., S.W.
Washington, D.C. 20250

and simultaneously to the Deciding Officer:

Chief (1570)
USDA, Forest Service
P.O. Box 96090
Washington, D.C. 20090-6090

The Notice of Appeal prepared pursuant to 36 CFR 217.9(b) must be submitted within 45 days from the date of legal notice of this decision. Review by the Secretary is wholly discretionary. If the Secretary has not decided within 15 days of receiving the Notice of Appeal to review the Chief's decision, appellants will be notified that the Chief's decision is the final administrative decision of the U.S. Department of Agriculture (36 CFR 217.17(d).

Chief

2/26/91
Date

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

ESTABLISHMENT RECORD FOR TUCKER LAKE HEMLOCKS
RESEARCH NATURAL AREA WITHIN CHEQUAMEGON
NATIONAL FOREST, PRICE COUNTY, WISCONSIN

☆ U.S. GOVERNMENT PRINTING OFFICE: 1983 - 425-976 - 415/6115 FS-6200-7 (10/73)

Tucker Lake Hemlocks

PHOTOGRAPHIC RECORD

Eric Epstein **EXHIBIT 5**

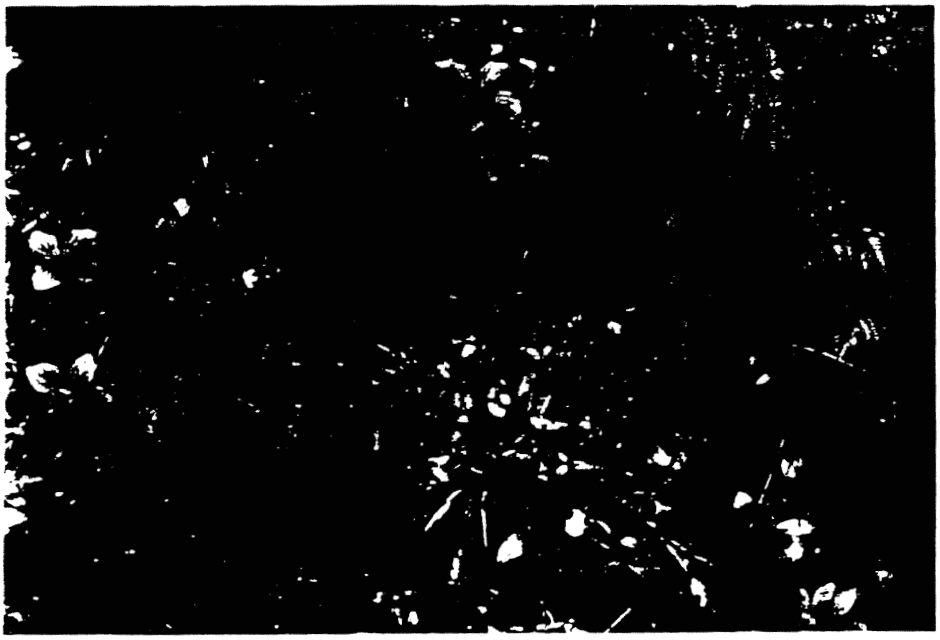
HEADQUARTERS UNIT
Chequamegon NF Price County, Wisc.

DATE SUBMITTED
February 23, 1988

INSTRUCTIONS: Submit to Washington Office in duplicate. Permanent numbers will be assigned and the forms will be distributed as follows: (1) Washington Office, (2) RO or Station, (3) Forest or Center and (4) Photographer.

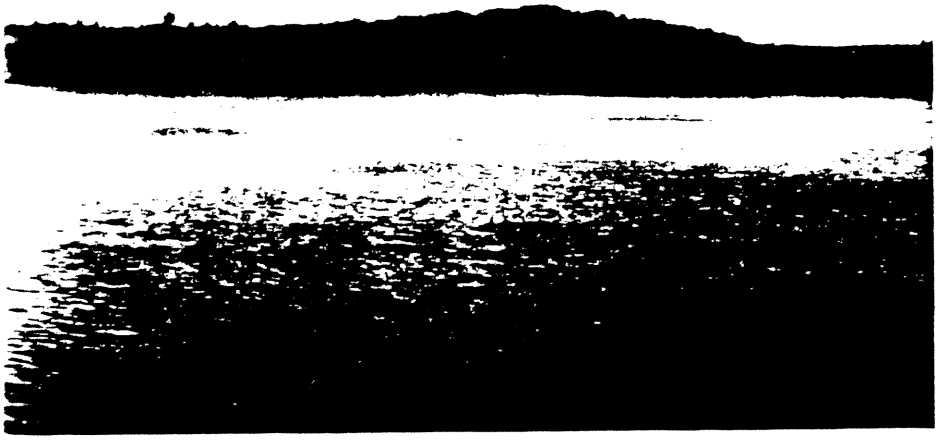
TEMP NO. (1)	PERMANENT NO. (To be filled in by the RO) (2)	SELECTED FOR W.O. PHOTO LIBRARY (3)	DATE OF EXPOSURE (4)	LOCATION (State and National Forest or County) (5)	DESCRIPTION OF VIEW (6)	NEGATIVE SIZE
1.			June 86	Wisconsin T40N,R3E Sec 13 SWSW,SESW, SWSE,NWSE, NESW	Old growth canopy of hemlock and yellow birch. Shrubs in foreground are mountain maple. (Acer spicatum).	
2.			June 86	Wisconsin T40N,R3E Sec 13 SWSW,SESW, NESW,SWSE, NWSE	Ground layer under hemlock canopy. Prevalent species include wood sorrel (Oxalis montana), bunchberry (Cornus canadensis), starflower (Trientalis borealis) and intermediate wood fern (Dryopteris intermedia).	
3.			June 86	Wisconsin T40N,R3E Sec 13 SWSW,SESW, NESW,SWSE, NWSE	Canopy of old growth yellow birch and hemlock. Note sparse shrub layer in foreground contrasting with canopy gap in background.	
4.			June 86	Wisconsin T40N,R3E Sec13 SWSW,SESW, NESW,SWSE, NWSE	Tucker Lake, taken from south shore.	
5.			June 86	Wisconsin T40N,R3E Sec13 SWSW,SESW, NESW,SWSE, NWSE	Mixed canopy species, mostly hemlock and yellow birch.	

1. Old growth canopy of eastern hemlock and yellow birch. Shrubs in foreground are mountain maple. (Acer spicatum).



2. Ground layer under eastern hemlock canopy. Prevalant species include wood sorrel (Oxalis montana),bunchberry (Cornus canadensis), starflower (Trientalis borealis) and intermedialte wood fern (Dryopteris intermedia).

3. Canopy of old growth yellow birch and eastern hemlock. Note sparse shrub layer in foreground contrasting with canopy gap in background.



4. Tucker Lake, taken from south shore.

5. Mixed canopy species, mostly hemlock and yellow birch.

SIGNATURE PAGE

for

RESEARCH NATURAL AREA ESTABLISHMENT RECORD

Tucker Lake Hemlocks Research Natural Area

Chequamegon National Forest

Price County, Wisconsin

The undersigned certify that all applicable land management planning and environmental analysis requirements have been met and that boundaries are clearly identified in accordance with FSM 4063.21, Mapping and Recordation and FSM 4063.41 5.3(3) in arriving at this recommendation.

Prepared by: _____ Date 9-12-88
Ron Herman, Forester

Recommended by: _____ Date 9-13-88
John R. Ward, District Ranger, Park Falls District

Recommended by: _____ Date 9-14-88
for John C. Wolter, Forest Supervisor,
Chequamegon National Forest

Recommended by: _____ Date 12-29-88
for Floyd J. Marita, Regional Forester, Eastern Region

Recommended by: _____ Date 1/2/89
for Ronald D. Lindmark, Station Director,
North Central Forest Experiment Station

TITLE PAGE

ESTABLISHMENT RECORD FOR THE TUCKER LAKE HEMLOCKS RESEARCH NATURAL AREA WITHIN THE CHEQUAMEGON NATIONAL FOREST, PRICE COUNTY WISCONSIN

ESTABLISHMENT RECORD FOR TUCKER LAKE HEMLOCKS
RESEARCH NATURAL AREA
WITHIN THE
CHEQUAMEGON NATIONAL FOREST
PRICE COUNTY WISCONSIN

INTRODUCTION

The significant natural qualities of this 158.1 acre (63.3 ha) RNA were first documented in 1972 by Wisconsin Department of Natural Resources (WDNR) biologists conducting an inventory of natural areas in Price County Wisconsin. The area was called to the attention of WDNR by Forest Service personnel. A field survey of the area was conducted in July 1972. This survey confirmed that the area did indeed possess natural features of high-quality and would merit RNA status. Tucker Lake Hemlocks RNA was inspected during the summer of 1986 by biologists of WDNR's Natural Heritage Program to update and expand existing information on the area's biota, assess the overall condition and quality of the area's major natural features, and make recommendations for appropriate protective status and/or management actions. This RNA is 158.1 acres (63.3 ha) and is on the north end of Round Lake.

The WDNR has given this biotic natural area a state-wide significance classification which is their highest classification level. The site features a very good example of old-growth eastern hemlock (Tsuga canadensis) and yellow birch (Betula alleghaniensis). (Photo 1) Society of American Foresters (SAF) cover type no. 24 Hemlock-Yellow Birch describes the old growth stand. The Kuchler type is no. 98, Northern Hardwood-Fir Forest.

Tucker Lake Hemlocks RNA was included in the Chequamegon National Forest Plan on a list of RNA's to be further evaluated. A field survey of the site conducted in 1986 confirmed that the Tucker Lake Hemlocks site exhibited few signs of past disturbance.

LAND MANAGEMENT PLANNING

The Tucker Lake Hemlocks RNA is in Management Goal 8. The Regional guide for the Eastern Region emphasizes the preservation of unique ecosystems for scientific purposes in Management Goal 8.

The Tucker Lake Hemlocks RNA is included in Goal 8.4 (Exhibit 3) and Goal 8.7 (Exhibit 4) of the Chequamegon National Forest Forest Plan. The Forest-wide standards, and Goal 8.4 and Goal 8.7 Management Prescriptions are designed to protect the character of the RNA and provide opportunity for education and scientific research and limited recreation in this RNA.

OBJECTIVES

The objectives of establishing the Tucker Lake Hemlocks RNA are to:

1. Preserve a spectrum of pristine representative areas that typify important forest types for research, study, observation, monitoring, and those educational activities that maintain unmodified conditions.
2. Serve as a reference area for the study of succession.
3. Serve as a baseline area for measuring long-term ecological changes.

JUSTIFICATION

Remnant communities of old-growth forest, particularly of upland types, are very rare in northern Wisconsin. Those which have been subjected to relatively little past disturbance merit preservation. Such areas offer research opportunities that are unavailable in managed forests. They also provide habitat for organisms that are intolerant of disturbance. Tucker Lake Hemlocks RNA contains approximately 68 acres (27.2 ha) of old-growth forest. (Photo 5) While the tract size may have difficulty in maintaining populations of those organisms that are primarily adapted to large tracts of relatively unbroken, undisturbed forest, the stand is one of the finest of its type and is thus of considerable significance. The RNA will serve as a reference area for the study of succession and as a baseline for measuring long-term ecological changes.

PRINCIPLE DISTINGUISHING FEATURES

The primary natural feature to note within Tucker Lake Hemlocks RNA is the old-growth forest.

The forest shows some evidence of past selective timber harvest 50+ years ago but is essentially unmanipulated. Dominant canopy species are eastern hemlock (*Tsuga canadensis*), yellow birch (*Betula alleghaniensis*), and sugar maple (*Acer saccharum*). Many canopy trees exceed 15 inches d.b.h. (37.5 cm), but scattered, much larger individuals are present (the largest tree measured was a yellow birch, at just under 40 inches d.b.h. (100 cm). Reproduction within the old-growth stand is primarily by sugar maple, but eastern hemlock is reproducing well near the south shore of Tucker Lake.

The RNA also includes a small tamarack (*Larix laricina*), dominated conifer swamp, and several stands of second-growth mixed hardwoods. These are most significant as a protection zone for the old-growth forest and lake from deleterious edge effects and enhance the overall natural qualities of the area.

LOCATION

The 158.1 acre (63.3 ha) Tucker Lake Hemlocks RNA is located on the Park Falls Ranger District of the Chequamegon National Forest in Price County Wisconsin. Offices of the Forest Supervisor are also in Park Falls. The location starts at Section corners 13, 14, 23, 24, T40N, R3E, thence S90°E, 3663', thence N0°W, 462', to point of beginning, which is 50' south of Tucker Lake shoreline on the west bank of Tucker Creek, thence S61°W, 1320', thence S1°E, 396', thence N74°W, 924', thence S81°W, 924', thence N47°W, 1122', thence N19°W, 660', thence N9°E, 462', thence N24°E, 594', thence N0°E, 561', thence N53°E, 594', thence S75°E, 594', thence N56°E, 792', thence S89°E, 858', thence S71°E, 462', thence N76°E, 330', thence N66°E, 462', thence S21°W, 528', to a point 50' from the Tucker Lake shoreline, thence staying a distance 50' parallel to the shoreline, travel in a westerly direction, thence southerly direction, thence easterly direction to the west bank of Tucker Creek to the point of beginning. Latitude of the RNA is 45°56'27" north, longitude is 90°03'30" west. Elevation ranges from 1555 ft. (474 m) at Tucker Lake to 1606 ft. (490 m). Additional details of location may be found on Map 1.

To reach the RNA, travel east from the Village of Fifield on State Highway 70, approximately 17 mi. (27.2 km) to the junction with Forest Road 144. Follow FR 144 north approximately 2.5 mi. (4 km) to Forest Road 535. Proceed east on FR 535 about .5 mi. (.8 km) to Round Lake Ski Trail (175). Follow the ski trail north 1.5 mi. (2.4 km) to the RNA. A topographic map and compass are useful.

Access to the RNA can also be reached by boat across Round Lake.

AREA BY COVER COVER TYPES (Map 2)

1. Society of American Foresters Cover Types

The RNA of old growth forest between Tucker and Round Lakes fall within SAF hemlock yellow birch cover type no. 24. The canopy is dominated by eastern hemlock and yellow birch.

SAF no. 24: Hemlock-Yellow birch 68 acres (27.2 ha)

The timber type west of the large eastern hemlock falls within SAF sugar maple-basswood cover type No. 26.

SAF no. 26: Sugar Maple-Basswood 21 acres (8.4 ha)

The cover type northwest of the large eastern hemlock falls within SAF tamarack cover type no. 38.

SAF no. 38: Tamarack 15 acres (6 ha)

The white birch cover type is mixed with aspen. It falls within the SAF paper birch cover type.

SAF no.18: Paper Birch 13 acres (5.2 ha)

The aspen cover type has some white birch mixed with it. It falls within the SAF aspen cover type.

SAF	no. 16:	Aspen	26 acres	(10.4 ha)

The swamp conifers falls within the SAF black spruce-tamarack type.

SAF	no. 13	Black Spruce-Tamarack	12 acres	(4.8 ha)

There is no SAF lowland brush cover type.

Non Forested	Lowland Brush	3 acres	(1.2 ha)

2. Kuchler Cover Type

The SAF hemlock-yellow birch and sugar maple-basswood cover types falls within the Kuchler maple-basswood forest classification.

KUCHLER	no. 99: Northern Hardwoods-Spruce Forest	68 acres	(27.2 ha)

The SAF tamarack cover type falls within the Kuchler Conifer Bog cover type.

KUCHLER	no. 85: Conifer Bog	27 acres	(10.8 ha)

The SAF paper birch cover type falls within the Kuchler Northern Hardwoods-Fir Forest.

KUCHLER	no. 98: Northern Hardwoods-Fir Forest	13 acres	(5.2 ha)

The SAF aspen cover type does not have a comparable Kuchler cover type number.

KUCHLER	no. None Aspen	26 acres	(10.4 ha)

The sugar maple basswood stand falls into the Kuchler type no. 90.

KUCHLER	no. 90: Maple-Basswood Forest	21 acres	(8.4 ha)

There is no Kuchler lowland brush cover type.

Non Forested	Lowland Brush	3 acres	(1.2 ha)

3. Water

Stream	.1 acres	(.01 ha)

PHYSICAL AND CLIMATIC CONDITIONS

1. Physical

The Tucker Lake Hemlock RNA lies northeast of Round Lake. The drainage pattern in this area is rather well defined with drainage into either Tucker Lake, or Tucker Creek. The geological high point in the area rises 51-55 ft.

(15.6 m-16.8 m) above the lakes. The soils have been mapped as glacial till rolling in the 4th order landform survey. The soils occur on rolling hills of outwash material.

2. Climate

The climate is continental, characterized by long, snowy, often severely cold winters and relatively short summers with warm days and cool nights. Springs and falls are often short with the transition from winter to summer and summer to winter quite rapid. Changes in weather from late fall to early spring can be expected every few days as frequent storms pass through the area along the Colorado and Alberta weather tracts. Prevailing winds are northwest to westerly late fall to early spring and from the south the rest of the year. Snowfall of over one inch (2.5 cm) can be expected, on the average, by the second week of November and there is a 90 percent probability of snow on the ground during the winter months. Although occasional deep snow years occur, the major snow belt lies to the north along the Penokee Range and Lake Superior. Frost can be expected occasionally during any of the summer months, especially in low lying areas. The average date of the last freeze is the last week in May to the first week in June, and the first freeze of the fall occurs in the last week in August to the first week in September.

548.0 mm POE

The mean annual precipitation is 33.9 in. (~~84.8 cm~~) of which 70 in. (175 cm) is snowfall.

The nearest weather station is in Park Falls, Wisconsin, approximately 20 miles (32 km) to the west. The RNA has an elevation of 1555 ft. (474.3 m) and the weather station an elevation of 1515 ft. (462.1 m). Their weather data is based on the previous 30 years of actual measurements.

DESCRIPTION OF VALUES

1. Flora

The old growth forest canopy is dominated by eastern hemlock (*Tsuga canadensis*), yellow birch (*Betula alleghaniensis*) and sugar maple (*Acer saccharum*). Canopy associates include basswood (*Tilia americana*), red maple (*Acer rubrum*), white ash (*Fraxinus americana*), balsam fir (*Abies balsamea*), and white pine (*Pinus strobus*). Sugar maple demonstrates the best reproduction.

The shrub layer is generally sparse, except where canopy gap allow sunlight to penetrate to the forest floor. Characteristic species are mountain maple (*Acer spicatum*), beaked hazelnut (*Corylus cornuta*), fly honeysuckle (*Lonicera canadensis*), and red alder (*Sambucus pubens*). A few heavily browsed canada yew (*Taxus canadensis*) are present.

The herb layer is characterized by species such as shining clubmoss (*Lycopodium lucidulum*), wood sorrel (*Oxalis montana*), small enchanter's nightshade (*Circaea alpina*), and intermediate wood fern (*Dryopteris intermedia*). (Photo 2)

A list of the vascular plants noted on the RNA (including aquatic species found in Tucker Lake) is attached at the end of this report. (Exhibit 1) Nomenclature generally follows Fernald (1950), Gleason and Cronquist (1963) and Little (1979).

No endangered or threatened plant species are presently known to occur on the RNA.

2. Fauna

Mammals using the area include red squirrel (Tamiasciurus hudsonicus), eastern chipmunk (Tamias striatus), beaver (Castor canadensis), porcupine (Erethizon dorsatum), muskrat (Ondatra zibethicus), and white-tailed deer (Odocoileus virginianus).

A breeding-bird survey was conducted in the hemlock stand on June 27, 1986. Characteristic species were blackburnian warbler (Dendroica fusca), black-throated green warbler (Dendroica virens), red-eyed vireo (Vireo olivaceous), ovenbird (Seiurus aurocapillus), and brown creeper (Certhis familiaris). An osprey (Pandion gakuaetys), endangered in Wisconsin, and a bald eagle (Haliaetus Leucocephalus), a federally threatened species, were also noted within the RNA boundary. A nesting pair of bald eagles have an active nest within the RNA.

A breeding-bird survey summary sheet is attached at the end of this report. (Exhibit 2) Nomenclature follows Robbins, Bruun, and Zim (1966).

3. Geology

The area is located within the southern Superior Upland Physiographic Province. Precambian granite bedrock, a part of the Canadian shield, underlies this area. Landforms are the result of continental glaciation of the late Wisconsinan ice age. The landscape is young in geologic age and characterized by a deranged type of drainage pattern.

4. Soil

This soil most closely resembles the Pedus soil series--sandy loam over sand and gravel, well drained, 5 to 15 percent slope.

This unit consists of rolling topography with soils that are well drained. Soil textures that may be found are sandy loam, fine sandy loam, and, to a lesser extent, loam or silt loam surfaces over sand and gravel. In it, there is a layer at least 2 ft. (.6 m) thick composed of a minimum of 35 percent gravel by volume. Silt and clay should comprise no more than ten percent of this layer.

This unit occurs on rolling hills of outwash materials. It had been mapped as glacial till rolling in the 4th order landform survey.

Inclusions are gravel soils of greater slope and outwash soils that do not meet the gravel criteria. Associated soils are the organic soils, other outwash soils, and till soils.

5. Lands

The Forest Service acquired the land under the Weeks Act and Land and Water Conservation Fund in 1968. Mineral rights are held by the Forest Service.

6. Cultural Resource

A cultural resource inventory has not been completed for the area and no cultural resource sites have been identified in the RNA. Completing an inventory of this area is a low priority as there will be no ground disturbing activities occurring in the area. Eventually, all areas of the Forest will be inventoried.

IMPACTS AND POSSIBLE CONFLICTS

1. Mineral Resources

There are no mining or exploration activities in the area. The Forest Service owns the mineral rights. It is not known if any mineral resources are present in the RNA.

2. Grazing

There is no grazing resource located within or close to the RNA. No fencing is necessary for the protection of the RNA.

3. Timber

One hundred fify five acres (62 ha) of commerical forest land will be removed for timber production thereby, reducing the the future harvestable stumpage from the Park Falls Ranger District. One hundred forty acres (56 ha) are upland forest types and 15 acres (6 ha) are lowland conifers.

The Tucker Lake Hemlocks RNA has 68 acres (27.2 ha) of old-growth hemlock-yellow birch that is vulnerable to windthrow if the surrounding timber were heavily harvested. If cutting must occur in the surrounding timber types, special consideration will be integrated into the project to insure the protection of the stand from windthrow. The Tucker Lake Hemlocks RNA is surrounded by sugar maple-basswood, tamarack, aspen, and paper birch types. (Map 2)

The old-growth hemlock-yellow birch is adjacent to tamarack, sugar maple-basswood, aspen, and paper birch forest types.

4. Watershed Values

The RNA and adjacent timber stands do have significant watershed values. They are adjacent to Tucker and Round Lakes and help protect the water quality of the lakes.

5. Recreation Values

Recreational use appears to be light. Hikers, cross-country skiers, hunters, and fishermen constitute the majority of users. Useage of the two trails is expected to be light. The useage will not threaten the research or educational values of the RNA.

The 118 acre (47.2 ha) Tucker Lake was deleted from the original proposal, because it is expected to be stocked with walleyes and muskies, thereby changing the gene pool. The lake has established useage and it is expected to increase.

The area east of Tucker Lake has been omitted, because it is expected to receive increased recreational usage that will threaten the research and educational value of the RNA.

6. Wildlife and Plant Values

Tucker Lake Hemlocks RNA supports a diverse array of non-game birds. Ruffed grouse (*Bonasa umbellus*) and woodcock (*Philohela minor*) certainly occur on the tract as well. Several important game mammals inhabit the tract. The flora is rich and composed of native species. Bald eagles and ospreys use the RNA for foraging. There is an active bald eagle nest within the RNA.

7. Special Management Area Values

The RNA is not in any congressionally designated wilderness. The Senate Committee on Agriculture, Nutrition, and Forestry submitted Report 98-413 on the Wisconsin Wilderness Act of 1984, where the Committee stated the "60-ac. tract known as the 'Old-Growth Stand' in the Round Lake Area (Tucker Lake Hemlocks) should receive special management considerations." The Forest Plan has not identified any potential wildernesses.

The Forest Plan has identified three study rivers, none of which are located in or near the RNA.

The Forest Plan has not identified any potential National Recreation Areas in the Chequamegon National Forest.

8. Transportation PLAN

There are no roads in the area nor are any roads planned to provide access. Forest trails 175 and 175D cross the southern part of the RNA.

MANAGEMENT PLAN

The Chequamegon National Forest Plan has the following Forest-wide standards for existing RNA's:

1. Prohibit all management activities except fire suppression and protection from insect and disease epidemics.

2. Allow natural processes of ecological change to continue.
3. Prohibit public use that threatens to modify area natural processes.
4. Encourage no-impact types of research studies through cooperative agreements with educational institutions.

The Management Prescriptions 8.4 and 8.7 will be used as guidelines. Specific standards and guidelines will have to be developed. (Exhibits 3,4)

Fire suppression and insect and disease control using the least destructive means will occur as needed to achieve the management objectives for the area.

The light public recreation will be tolerated, but not encouraged in the RNA. It will not threaten the research or educational values of the RNA.

Any management activities occurring in stands adjacent to the RNA will be designed to protect the RNA.

Protection of the RNA requires no manipulation of the vegetation.

Control measures will be taken if any beaver activity threatens the research, or ecucational values of the RNA.

The Chequamegon National Forest Land and Resource Management Plan was issued in 1986 under Record of Decision dated August 11, 1986. Management prescription 8, Special Areas, provides for designation of unique areas for their scientific and biological significance. This is one of the ten areas identified in the Forest Plan. The ten areas are also State of Wisconsin research natural areas.

ADMINISTRATIVE RECORDS AND PROTECTION

The administrator and protector of this area is:

District Ranger
USDA-Forest Service
Chequamegon National Forest
1170 4th Avenue South
Park Falls, Wisconsin 54552

The research coordinator of this area is:

Director
USDA-Forest Service
North Central Forest Experiment Station
1992 Folwell Avenue
St. Paul, Minnesota 55108

The research data file is maintained by:

Wisconsin Department of Natural Resources
Bureau of Endangered Resources
Natural Heritage Section
Box 7921
Madison, Wisconsin 53707

Director
USDA-Forest Service
North Central Forest Experiment Station
1992 Folwell Avenue
St. Paul, Minnesota 55108

Forest Supervisor
USDA-Forest Service
Chequamegon National Forest
1170 4th Avenue South
Park Falls, Wisconsin 54552

REFERENCES

Cottam, G. and J. T. Curtis, 1956. The Use of Distance Measures in Phytosociological Sampling. Ecology, Vol. 37:451-60.

Eyre, F. H. (ed.), 1980. Forest Cover Types of the United States and Canada, Society of American Foresters, 5400 Grosvenor Lane, Washington, DC 20014.

Fernald, M. L., 1950. Gray's Manual of Botany, American Book Company, New York, New York.

Gleason, H. A. and A. Cronquist, 1963. Manual of Vascular Plants of Northeastern United States and Adjacent Canada, D. Van Nostrand Company, New York, New York.

Little, Elbert L. Jr. 1979. Checklist of United States Trees (Native and Naturalized), Agriculture Handbook No. 541, Forest Service, U.S. Department of Agriculture.

Robbins, C.S., Bruun, B., Zim, H.S., 1966. A Guide to Field Identification of Birds of North America, Golden Press, 340 pp.

Roth, J. and G. Beaver, 1984. Lake Suvey Summary, Tucker Lake, Price County; Unpublished.

Sather, L. M. and C. D. Busch, 1983. Surface Water Resources of Price County Wisconsin Department of Natural Resources, Madison, Wisconsin.

Whitaker, John Jr., 1988. The Audubon Society Field Guide to North American Mammals, Alfred A. Knoff, Inc. N.Y. 745 pp.

1986. Land and Resource Management Plan, Chequamegon National Forest, Park Falls, Wisconsin.

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1986. Land and Resource Management Plan, Chequamegon National Forest, Park Falls, Wisconsin.

SCIENTIFIC NAME	COMMON NAME
Abies balsamea	Balsam Fir
Acer rubrum	Red Maple
Acer saccharum	Sugar Maple
Acer spicatum	Mountain Maple
Actaea pachypoda	White Baneberry
Adiantum pedatum	Northern Maidenhair Fern
Anemone quinquefolia	Wood Anemone
Aralia nudicaulis	Wild Sarsaparilla
Aralia racemosa	Spikenard
Arisaema triphyllum	Jack-in-the-Pulpit
Athyrium filix-femina angustum	Lady Fern
Betula alleghaniensis	Yellow Birch
Betula papyrifera	Paper Birch
Carex arctata	
Carex intumescens	Swollen Sedge
Carex pensylvanica	Pennsylvania Sedge
Circaea alpina	Small Enchanter Nightshade
Circaea quadrisulcata	Enchanters Nightshade
Clintonia borealis	Bluebead
Coptis trifolia groenlandica	Goldthread
Corallorhiza maculata	Spotted Coral Root
Corallorhiza trifida	Early Coral Root
Cornus canadensis	Bunchberry
Corylus cornuta	Beaked Hazelnut
Dryopteris intermedia	Intermediate Wood Fern
Fraxinus americana	White Ash
Galium triflorum	Sweet Scented
Gymnocarpium dryopteris	Oak Fern
Hepatica americana	Round Lobed Hepatica
Lonicera canadensis	American Fly Honeysuckle
Lycopodium dendroideum	Round-branched Clubmoss
Lycopodium lucidulum	Shining Clubmoss
Maianthemum canadense	Canada Mayflower
Matteuccia struthiopteris pensylvani	Ostrich Fern
Mitchella repens	Partridge Berry
Mitella nuda	Small Bishop's Cap
Osmorhiza claytoni	Hairy Sweet Cicely
Osmunda claytoniana	Interrupted Fern
Oxalis montana	Wood Sorrel
Phegopteris connectilis	Long Beech Fern
Phlox divaricata	Blue Phlox
Picea glauca	White Spruce
Pinus strobus	White Pine
Polemonium reptans	Jacob's Ladder
Polygonum scandens	Climbing False Buckwheat
Populus grandidentata	Large-toothed Aspen
Pyrola elliptica	Large-leaved Shinleaf
Rubus parviflorus	Thimbleberry
Rubus pubescens	Dwarf Raspberry
Rubus sp	Raspberry,Blackberry
Sambucus pubens	Red-berried Elder
Smilacina racemosa	False Solomon's Seal
Streptopus roseus longipes	Twisted Stalk
Taxus canadensis	Canadian Yew
Tilia americana	Basswood

Trientalis borealis	Starflower
Tsuga canadensis	Hemlock
Uvularia grandiflora	Bellwort
Viburnum (edule)?	Squashberry
Viola sp	Violet

Price County

SUMMARY SHEET – BREEDING BIRD SURVEY
Department of Natural Resources
Scientific Areas Preservation Council
Box 7921 Madison, Wisconsin 53707

Observer's Name Eric Epstein
Address
Phone #

Area Tucker Lake Hemlocks
Date 27 June 1986
Total # Species
Total # Individuals

USE BACK FOR MORE COMMENTS

WEATHER:

EXHIBIT 2

Temperature F.	65	75
Wind Speed	0	0
Sky	4	4
Time	0645	0[illegible]

Species	Visit A	B	C	D
Common Loon	2			
Pied-billed Grebe				
Double-cr. Cormorant				
Great Blue Heron				
Green Heron				
Great Egret				
Black-cr Night Heron				
Eastern Least Bittern				
American Bittern				
Canada Goose				
Black Duck				
Mallard	1			
Gadwall				
Pintail				
Green-winged Teal				
Blue-winged Teal				
Northern Shoveler				
Wood Duck	1			
Redhead				
Ring-necked Duck				
Lesser Scaup				
Common Goldeneye				
Ruddy Duck				
Hooded Merganser				
Common Merganser				
Red-breast. Merganser				
Turkey Vulture				
Goshawk				
Sharp-shinned Hawk				
Cooper's Hawk				
Red-tailed Hawk				
Red-shouldered Hawk				
Broad-winged Hawk				
Bald Eagle	1			
Marsh Hawk (Harrier)				
Osprey	1			
American Kestrel				
Ruffed Grouse				
Prairie Chicken				
Sharp-tailed Grouse				
Bobwhite				
Ring-necked Pheasant				
Gray Partridge				
Sandhill Crane				
King Rail				
Virginia Rail				
Sora Rail				
American Coot				
Killdeer				
American Woodcock				
Common Snipe				
Upland Sandpiper				
Spotted Sandpiper				
Herring Gull				
Ring-billed Gull				
Bonaparte's Gull				
Forster's Tern				
Common Tern				
Caspian Tern				
Black Tern				
Rock Dove				

Species	Visit A	B	C	D
Yellow-billed Cuckoo				
Black-billed Cuckoo				
Screech Owl				
Great Horned Owl				
Barred Owl				
Whip-poor-will				
Common Nighthawk				
Chimney Swift				
Ruby-thr. Hummingbird				
Belted Kingfisher	1			
Common Flicker	1			
Pileated Woodpecker	*			
Red-bell. Woodpecker				
Red-headed Woodpecker				
Yellow-b. Sapsucker	1			
Hairy Woodpecker				
Downy Woodpecker				
Eastern Kingbird				
Crested Flycatcher				
Phoebe	1			
Yellow-b. Flycatcher				
Acadian Flycatcher				
Willow Flycatcher				
Alder Flycatcher				
Least Flycatcher	3			
Wood Pewee	1			
Olive-sided Flycatcher				
Horned Lark				
Tree Swallow				
Bank Swallow				
Rough-winged Swallow				
Barn Swallow				
Cliff Swallow				
Purple Martin				
Gray Jay				
Blue Jay				
Northern Raven				
American Crow				
Black-capped Chickadee				
Tufted Titmouse				
White-breast. Nuthatch				
Red-breasted Nuthatch				
Brown Creeper	3			
House Wren				
Winter Wren	3			
Marsh Wren				
Sedge Wren				
Gray Catbird				
Brown Thrasher				
American Robin				
Wood Thrush				
Hermit Thrush	1			
Veery	2			
Eastern Bluebird				
Blue-gray Gnatcatcher				
Golden-crowned Kinglet				
Ruby-Cr. Kinglet				
Cedar Waxwing				
Loggerhead Shrike				
Starling				
White-eyed Vireo				
Yellow-throated Vireo				

Species	Visit A	B	C
Solitary Vireo			
Red-eyed Vireo	9		
Warbling Vireo			
Black & White Warbler			
Prothonotary Warbler			
Golden-winged Warbler			
Blue-winged Warbler			
Nashville Warbler			
Northern Parula	5		
Yellow Warbler			
Magnolia Warbler			
Yellow-Rumped Warbler	1		
Bl.-thr. Green Warbler	6		
Cerulean Warbler			
Blackburnian Warbler	14		
Chestnut-sided Warbler			
Pine Warbler			
Ovenbird	11		
Northern Waterthrush			
La. Waterthrush			
Kentucky Warbler			
Mourning Warbler			
Common Yellowthroat			
Canada Warbler			
American Redstart			
House Sparrow			
Bobolink			
E. Meadowlark			
W. Meadowlark			
Yellow-head. Blackbird			
Red-winged Blackbird			
Northern Oriole			
Brewer's Blackbird			
Common Grackle			
Br.-headed Cowbird			
Scarlet Tanager	1		
Cardinal			
R-breasted Grosbeak			
Indigo Bunting			
Dickcissel			
Evening Grosbeak			
Purple Finch			
American Goldfinch			
Red Crossbill			
R-sided Towhee			
Savannah Sparrow			
Grasshopper Sparrow			
Henslow's Sparrow			
Vesper Sparrow			
Lark Sparrow			
Northern Junco			
Chipping Sparrow			
Clay-colored Sparrow			
Field Sparrow			
White-throated Sparrow			
Lincoln's Sparrow			
Swamp Sparrow			
Song Sparrow			
Additional Species:			

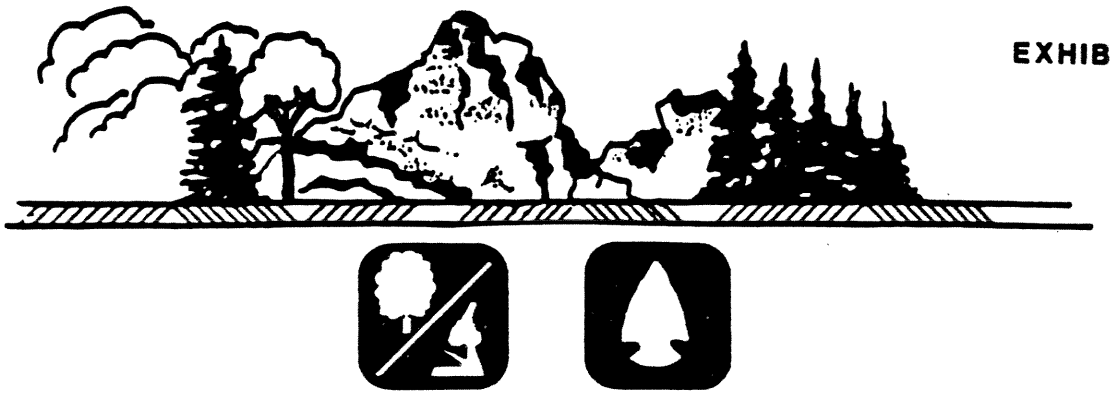

EXHIBIT 3

MANAGEMENT PRESCRIPTION 8.4

The purposes of Management Prescription 8.4 are to:

- Preserve the natural character of the Moquah Research Natural Area
- Provide opportunities for education and scientific research. (Ref. Forest Service Manual 4063)
- Provide management opportunities for all 10 candidate Research Natural Areas and for all future Research Natural Areas designated by the Chief of the Forest Service.

AREA LANDFORM DESCRIPTION

The Moquah Research Natural Area (T48N, R7W, S.23 is primarily pitted outwash. The topography is rolling to hilly. Slope gradients are 5-20% but can range up to 35%. Topographic relief is due to depression "pits" in the plain. The soils are very sandy.

8.4

DESIRED CONDITION OF THE LAND

The Moquah Research Natural Area is characterized by undulating topography and droughty soils. The prescription for this area will result in the dominant tree species of aspen, jack pine, and northern red oak. Tree sizes range from seedlings to mature trees. A few small, natural openings are present.

Forest visitor density in this area is low. Forest management activities are not permitted except for fire protection activities. Facilities, structures, and utility corridors are not present.

The Moquah Research Natural Area is bisected by Forest Road 236. Forest Road 407 cuts the southwest corner of the area, and is open to vehicular travel. The area is in a roaded natural setting.

STANDARDS AND GUIDELINES FOR PRESCRIPTION 8.4

<u>1900 Land and Resource Management Planning</u>	
Vegetative Management	Vegetative composition will evolve through natural succession.
<u>2200 Range Management</u>	Grazing is not permitted.
<u>2300 Recreation Management</u>	
Recreation Use Administration	Feature semi-primitive, nonmotorized recreation opportunities.
Visual Resources	Meet the visual quality objective of preservation.
<u>7700 Transportation Systems</u>	
	Develop no additional roads. Maintain or upgrade existing local roads as needed to comply with special area management objectives.

MANAGEMENT PRESCRIPTION 8.7

The purposes of Management Prescription 8.7 are to:

- Preserve the Tucker Timber Area, 60 acres of old growth timber, where naturally existing plants and animals can reproduce undisturbed.
- Provide opportunities for nonmotorized recreation use.

AREA LANDFORM DESCRIPTION

The Tucker Timber Area is nearly level sandy outwash lying along channels of old glacial streams that formed underneath the ice. The area is dominated by clean outwash sands and gravels.

DESIRED CONDITION OF THE LAND

During the deliberation for the Wisconsin Wilderness Act of 1984, the Senate Committee of Agriculture, Nutrition, and Forestry indicated that this 60-acre area of old growth hemlock be managed in its natural state.

Management prescription 8.7 will protect and maintain relatively undisturbed plant and animal populations. Present recreation uses will continue. The existing trail system will be maintained for hiking, canoe portaging, and cross-country skiing. Wheeled devices will be permitted for transporting canoes and boats across the existing portage trail. Primitive type camping will be allowed on the north shore of Round Lake and the south shore of Tucker Lake. Grooming and tracking the existing cross-country ski trail with the use of a snowmobile will be permitted. Timber harvesting will not be permitted.

STANDARDS AND GUIDELINES FOR PRESCRIPTION 8.7

1900 Land and Resource Management Planning

Vegetative Management	Vegetative composition will evolve through natural succession.
2200 Range Management	Grazing is not permitted.

2300 Recreation Management

Recreation Use Administration	Feature semi-primitive, nonmotorized recreation opportunities.
Trail Use and Operation	Provide trails for nonmotorized use. Permit motorized vehicles on trails in the following situations: o Emergency search and rescue o Fire suppression o Law enforcement o Trail maintenance Minimize the use of trail signs to provide area visitors with a semi-primitive recreation experience.
Cultural Resource Interpretation	On-site cultural resource interpretation will not occur.
Visual Resources	Meet the visual quality objective of preservation.

7700 Transportation Systems

Roads will not be developed.