

United States
Department of
Agriculture

Forest
Service

WO

Permanent File

Reply to: 4060-3
(TMR)

Date: June 7, 1988

4060

Subject: Chequamegon Hardwoods RNA

To: Regional Forester, R-9, and Director, NC Station

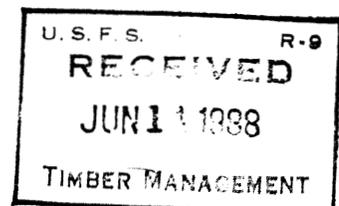
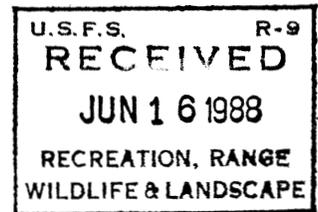
Congratulations. The Establishment Record for the Chequamegon Hardwoods Research Natural Area (RNA) was signed by the Chief on May 18. Region 9 now has 14 and NC Station 11 official RNAs. We look forward to receiving many more candidate RNAs in the near future. Keep up the good work.

Enclosed is a copy of the approved Establishment Record for your files, and for copying and distribution to appropriate field units. Thank you again for your cooperation.



STANLEY L. KRUGMAN, Director
Timber Management Research

Enclosure



Chequamegon Hardwoods

DESIGNATION ORDER

By virtue of the authority vested in me by the Secretary of Agriculture under regulations 7 CFR 2.60(a) and 36 CFR 251.23, I hereby designate as the Chequamegon Hardwoods Research Natural Area, the lands described in the following establishment record prepared by Ron Herman, dated February 23, 1988. These lands shall hereafter be administered as a research natural area subject to the above regulations and instructions issued thereunder.

F. Dale Robertson
Chief

May 18, 1988
Date

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

ESTABLISHMENT RECORD FOR CHEQUAMEGON HARDWOODS
RESEARCH NATURAL AREA WITHIN CHEQUAMEGON
NATIONAL FOREST, ASHLAND COUNTY, WISCONSIN



USDA - FOREST SERVICE

PHOTOGRAPHIC RECORD

PHOTOGRAPHER

E. Smith

HEADQUARTERS UNIT

Chequamegon NF

LOCATION

Price County, Wis.

DATE SUBMITTED

March 1, 1988

INSTRUCTIONS: Submit to Washington Office in quadruplicate. 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.	PERMANENT NO. (To be filled in by the WO)	SELECTED FOR W.O. PHOTO LIBRARY	DATE OF EXPOSURE	LOCATION (State and National Forest or County)	DESCRIPTION OF VIEW	NEGATIVE SIZE
(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Chequamegon National Forest Wisconsin		
1			June 86	Sec. 6 T44N R3W	Chequamegon Hardwoods Research Natural Area - south end, general aspect with sugar maple and yellow birch. Leatherwood, spikenard, wood fern & maple seedlings in the understorey.	
2			June 86	Sec. 6 T44N R3W	Chequamegon Hardwoods Research Natural Area - General aspect with sugar maple canopy. Understorey of woodland horsetail, swollen sedge and maple seedlings.	
3			June 86	Sec. 6 T44N R3W	Chequamegon Hardwoods Research Natural Area - Gabbo exposure in northwest quarter. Canopy of yellow birch & sugar maple. Exposure vegetated with rockcap fern and mosses.	
4			June 86	Sec. 6 T44N R3W	Chequamegon Hardwoods Research Natural Area - south edge looking north. Old field and resulting edge. Note dead americal elms.	



1. Chequamegon Hardwood Research Natural Area - south end, general aspect with sugar maple and yellow birch. Leatherwood, spikenark, wood fern & maple seedlings in the understory.



2. Chequamegon Hardwoods Research Natural Area - General aspect with sugar maple canopy. Understory of woodland horsetail, swollen sedge and maple seedlings.



3. Chequamegon Hardwoods Research Natural Area - Gabbro exposure in northwest quarter. Canopy of yellow birch & sugar maple. Exposure vegetated with rock-cap fern and mosses.



4. Chequamegon Hardwoods Research Natural Area - South edge looking north. Old field and resulting edge. Note dead american elms.

SIGNATURE PAGE
FOR

RESEARCH NATURAL AREA ESTABLISHMENT RECORD
CHEQUAMEGON HARDWOODS RESEARCH NATURAL AREA

CHEQUAMEGON NATIONAL FOREST
ASHLAND COUNTY WISCONSIN

The undersigned certify that all applicable land management planning and environmental analysis requirements have been met in arriving at this recommendation.

Prepared by: Ron Herman Date 2-23-88
Ron Herman, Forester

Recommended by: Elizabeth Ohlogge Date 3/2/88
Elizabeth Ohlogge, District Ranger, Glidden District

Recommended by: John C. Wolter Date 3-15-88
John C. Wolter, Forest Supervisor, Chequamegon National Forest

Recommended by: Floyd J. Marita Date 4/14/88
Floyd J. Marita, Regional Forester, Eastern Region

Recommended by: R. D. Lindmark Date 4/27/88
Ronald D. Lindmark, Station Director, North Central Forest and Range Experiment Station

TITLE PAGE

ESTABLISHMENT RECORD FOR CHEQUAMEGON HARDWOODS
RESEARCH NATURAL AREA WITHIN CHEQUAMEGON
NATIONAL FOREST, ASHLAND COUNTY WISCONSIN

ESTABLISHMENT RECORD FOR CHEQUAMEGON HARDWOODS
RESEARCH NATURAL AREA
WITHIN THE
CHEQUAMEGON NATIONAL FOREST
ASHLAND COUNTY WISCONSIN

Introduction

The RNA is located entirely on lands owned by the Chequamegon National Forest in western Ashland County, Wisconsin. A location map, cover type map, ownership map and color photographs (See Exhibit 4) are attached to this report. (See Maps 1-4)

The significant natural qualities of this area were documented by Wisconsin Department of Natural Resources (WDNR) biologist and zoologist conducting an inventory of natural areas in Ashland County Wisconsin. This inventory confirmed that the area did indeed possess natural features of high quality and would merit RNA status. Chequamegon Hardwoods RNA was inspected during the summer of 1986 by zoologists and 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 makes recommendations for appropriate protective status and/or management actions.

The tree cover fits into the Society of American Forester (SAF) cover type no. 26 and Kuchler cover type no. 90. The 5-acre black ash timber type fits the Society of American Foresters (SAF) cover type no. 39 and loosely into the Kuchler cover type no. 98. (See Photo 1)

Chequamegon Hardwoods RNA was included in the Chequamegon National Forest Plan. The Forest Plan has indicated 80 acres (32 ha).

There are no known endangered or threatened flora or fauna species in the RNA.

LAND MANAGEMENT PLANNING

The Chequamegon Hardwoods 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 Chequamegon Hardwoods RNA is included in Goal 8.4 of the Chequamegon National Forest Plan. The Forest-wide standards, and Goal 8.4 Management Prescriptions are designed to protect the character of the RNA and provide opportunity for education and scientific research in RNA's. (See Exhibit 3)

OBJECTIVES

The objectives of establishing the Chequamegon hardwoods are to:

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

JUSTIFICATION

The WDNR has given this biotic natural area a state-wide significance classification which is their highest level. This site was recommended for protection by the Wisconsin DNR's Natural Heritage section because it is an example of a relatively intact mesic northern hardwood forest that was logged in the 1930's but retains patches of old-growth hardwoods and areas with old, large-toothed aspen (Populus grandidentata). Establishment of Chequamegon Hardwoods as a Research Natural Area would protect a relatively intact example of mesic northern hardwood forest. This stand was selectively logged for hardwood saw logs in the 1930's but retains patches of old-growth hemlock-hardwood type and areas with old, large-toothed aspen (Populus grandidentata). The herbaceous layer, having never been grazed, is diverse with over 80 plant species present.

Although the RNA was logged in the 30's, the second-growth hardwood is predominantly sugar maple, with scattered yellow birch pole size timber. The RNA will serve as a reference area for the study of succession from logging to eventually mature northern hardwoods forest. It will also serve as a baseline area for measuring long-term ecological changes with the SAF cover type no. 26, no. 39, and Kuchler cover types no. 90 and 98. (See Photo 2)

PRINCIPAL DISTINGUISHING FEATURES

The Chequamegon Hardwoods RNA is primarily a stand of old second-growth mesic northern hardwood forest with an undisturbed understory. Most of the stand is dominated by sugar maple (Acer saccharum), basswood (Tilia americana) and yellow birch (Betula alleghaniensis). Portions of the stand feature eastern hemlock (Tsuga canadensis) and very large, big-toothed aspen (Populus grandidentata). A small area of black ash (Fraxinus nigra) swamp with high american elm (Ulmus Americana) mortality, is found in the northwest corner of the tract. Midstory plants include shrubs characteristic of northern mesic forests including leatherwood (Dirca palustris) and alternate-leaved dogwood (Cornus alternifolia). The ground layer flora is considered quite rich and is described in more detail under the section on flora. A small stream bisects the tract north to south and supports an aquatic invertebrate fauna. There are several exposures of gabbro bedrock--some up to 50 feet high (15.3 m). (See Photo 3)

LOCATION

Chequamegon Hardwoods RNA is located on the Glidden Ranger District of the Chequamegon National Forest in Ashland County. The Forest Supervisor's Office is in Park Falls, Wisconsin. The location is N 1/2 NW 1/4, Sec. 6, T44N, R3W. (See Map 1) Additional location details may be found on the attached topographic quadrangle (USGS 7.5' series), Marengo SE quadrangle, and Ashland County Plat Book Page. (See Map 2) Latitude of the RNA is 46°19' north; longitude is 90°46' west. Elevation ranges from 1,360 ft. (415.8 m) to 1,528 ft. (466 m).

To reach the RNA, travel southeast from Mellen on County Highway GG approximately 8 miles (12.8 km) to the junction with FR 187. Follow FR 187 3/4 miles (1.2 km) to the junction of FR 188. Follow FR 188 approximately 1 3/4 miles (2.8 km) north to a private road. Turn north on the private road 1/4 mile (.4 km) to the southwest corner of the RNA. Contact the District Ranger if the landowner prohibits access to the RNA. No written permission is required at time of designation. DV/RWS

AREA BY COVER TYPE

1. Society of American Foresters Cover Types

The majority of the tract is dominated by sugar maple and basswood.

SAF no. 26, Sugar Maple-Basswood 75 acres (30 ha)

The northwest corner of the site contains black ash and American elm.

SAF no. 39, Black Ash-American Elm-Red Maple 5 acres (2 ha)

2. Curtis Community Types

The northern hardwoods fall into the very broad Northern Mesic Forest type as classified by Curtis (1959).

Northern Mesic Forest 75 acres (30 ha)

The black ash swamp falls into the Northern Wet-Mesic Forest type, though this classification is usually dominated by conifers.

Northern Wet-Mesic Forest 5 acres (2 ha)

3. Kuchler Cover Types

The northern hardwood stand is dominated with sugar maple with basswood, yellow birch, hemlock, and red oak as associated species.

Kuchler no. 90, Maple-Basswood 75 acres (30 ha)

The black ash swamp falls loosely into the northern hardwoods-fir forest of Kuchler (1969).

Kuchler no. 98, Northern Hardwood-Fir 5 acres (2 ha)

4. Aquatic Features

A small stream flows through the RNA and supports an aquatic invertebrate fauna.

PHYSICAL AND CLIMATIC CONDITIONS

1. Physical

The RNA has rolling topography with a small stream bisecting the tract north to south. There are several exposures of gabbro bedrock up to 50 feet high (15.3 m). (See Photo 3)

2.

Climate

The climate is continental, characterized by long, snowy, often severely cold winters and relatively short summers with warm days and cool nights. Spring

and fall 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 1 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 snowbelt 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 may occur in the last week in August to the first week in September.

The mean annual average precipitation is 33.9 inches (84.8 cm), of which 85 inches (212.5 cm) is snowfall.

The nearest weather station is in Mellen, Wisconsin, approximately 7 miles (11.2 km) to the east. Their weather data is based on the previous 20 years of actual measurements.

DESCRIPTION OF VALUES

1. FLORA

The canopy of Chequamegon Hardwoods is dominated by sugar maple (Acer saccharum), (4"-9" d.b.h.), basswood (Tilia americana), yellow birch (Betula alleghaniensis), (up to 42" d.b.h.), big-toothed aspen (Populus grandidentata), and American elm (Ulmus americana). Canopy associates, present in smaller numbers, include red oak (Quercus rubra), hemlock (Tsuga canadensis), and white ash (Fraxinus americana). The midstory includes sugar maple saplings, leatherwood, alternate-leaved dogwood, mountain maple (Acer spicatum), and beaked hazel (Corlyus cornuta). The ground flora is especially diverse and includes spikenard (Aralia racemosa), green adder's mouth (Malaxix unifolia), nodding trillium (Trillium cernuum), maidenhair fern (Adiantum pedatum), and bloodroot (Sanguinaria canadensis). Three species of orchids are also present; purple-fringed orchid (Habenaria psycodes), spotted coral root (Corallorhiza maculata), and early coral root (Corallorhiza trifida). Sugar maple reproduction is high as evidenced by an abundance of seedlings.

The northwest corner of the tract is wetter and dominated by black ash. Understory species include speckled alder (Alnus rugosa), swamp aster (Aster puniceus), and spotted joe pye weed (Eupatorium maculatum).

The stream contains a good population of Fontinalis, an aquatic moss.

A comprehensive list of the vascular plants observed on the tract is attached to this report. (See Exhibit 1) Nomenclature follows Gleason and Cronquist (1963) and Fernald (1950), and Little (1979). No state or federally threatened or endangered plant species are known to currently exist on the tract.

2. FAUNA

Chequamegon Hardwoods harbors breeding birds typical of northern mesic hardwood forests. These include interior species such as wood pewee (Contopus virens)¹, black-throated green warbler (Dendroica verens), ovenbird (Seiurus aurocapillus), and red-eyed vireo (Vireo olivaceus). Several 'edge' species are also present including rose-breasted grosbeak (Pheucticus ludovicianus), American robin (Turdus migratorius), and white-throated sparrow (Zonotrichia albicollis). (See Exhibit 2)

Amphibians observed on the tract include wood frog (Rana sylvatica)² and red-backed salamander (Plethodon cinerius).

The stream supports an abundant larval caddisfly (Trichopteran)³ fauna.

No state or federally threatened or endangered animal species are known to currently exist on the RNA.

3. GEOLOGY

Precambrian granite bedrock, a part of the Canadian shield, underlies this area. There are several exposures of gabbro bedrock up to 50 ft. (15.3m) high.

The RNA is situated on glacial deposits from the Woodfordian substage of the Wisconsin ice advance.

4. SOILS

Gogebic Series - moderately well drained soils formed in sandy loam on moraines. A very dark gray, fine sandy loam surface layer and a reddish-gray, fine sandy loam subsurface layer 2 inches thick (5 cm). The subsoil is dark reddish-brown. Friable fine sandy loam and sandy loam in upper 20 inches (50 cm) reddish-brown, very firm sandy loam next 19 inches (47.5 cm). Friable sandy clay loam in lower 12 inches (30 cm). Slopes range from 0-40 percent.

Rib Series - These soils are on level to gently sloping outwash plains and stream terraces--one to two percent slopes. Rib soils formed in moderately thick silt loam mantles of aeolian or lacustrine origin over leached brownish sand and gravel.

5. LANDS

The Forest Service acquired the land under the Clark-McNary Act, June 1936. The mineral rights are reserved by a third vendor. No known mineral leases have been signed in the vicinity of the RNA. It is unknown if there are any mineral deposits on the RNA.

The north edge is the proclamation boundary of the Chequamegon, thus, there is no opportunity to acquire land to completely surround the RNA with Federal ownership.

The University of Wisconsin owns one parcel and a paper company owns the other parcel. Their likelihood of creating a significant adverse edge on the RNA's northern boundary is remote.

¹ Nomenclature follows Robbins, Brown, & Zim. 1966.

² Nomenclature follows Behler 1979.

³ Nomenclature follows Sutherland. 1978.

6. CULTURAL RESOURCES

Cultural resource inventory has not been completed for the area and no cultural resource sites have been identified. 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

The Forest Service does not own the mineral rights on the RNA. They have been retained by a third vendor. No prospecting permits have been issued in the area.

2. GRAZING

There is no grazing resource located within or close to the RNA.

3. TIMBER

Eighty acres (32 ha) of commercial forest land will be withdrawn from timber production, thereby reducing the harvestable hardwoods on the Glidden Ranger District now and in the future.

The area immediately south of the proposed RNA is old field. The once well defined field edge has been lost with the encroachment of trees and brush into the field. (Photo 4) The continual natural vegetative reproduction will be allowed to continue thereby, helping to protect the RNA from windthrow.

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

4. RECREATION

Levels of recreational use of the RNA are unknown. Presumably, the tract receives occasional use by hunters and hikers.

5. WATERSHED VALUES

The RNA and adjacent Forest stands do have significant watershed values. The undisturbed forest will protect the soil from erosion and maintain the water quality of the small stream that flows into Beaverdam Lake.

6. WILDLIFE AND PLANT VALUES

Chequamegon Hardwoods RNA features pockets of old-growth forest and some very large individual trees which provide habitat for animals. The associated herbaceous flora is very rich. The avifauna of the tract is typical for its type.

There are no known threatened or endangered plant or animal species in the RNA.

7. WILDERNESS, WILD AND SCENIC RIVER, OR NATIONAL RECREATION AREA VALUES

The RNA is not in a wilderness. Wilderness legislation was passed for Wisconsin in 1984. The Forest Plan has not identified any potential wildernesses.

8. TRANSPORTATION PLANS

FR 188 is 1/4 mi. (.4 km) south of the RNA and a private road is just west. The RNA does not impact planned road development.

MANAGEMENT PLAN

The Chequamegon National Forest Plan has the following Forest-wide standards for 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 Prescription 8.4 will be used as a guideline. Specific standards and guidelines will have to be developed.

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

Light public recreation will be tolerated but not encouraged in the area.

The continual natural vegetative reproduction will be allowed to encroach into the field thereby, helping to protect the RNA from windthrow.

It is also recommended that the forest outside the RNA be managed to have no impact on 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 RNA areas identified in the Forest Plan. The ten areas are also State of Wisconsin Research Natural Areas.

VEGETATION MANAGEMENT -- There are no plans for manipulating the existing vegetation. DN/RNWS

FENCES -- No fences are required for the protection and management of the area. DN/RNWS

WISCONSIN ADMINISTRATIVE RECORDS AND PROTECTION

The administrator and protector of this area is:

District Ranger
Chequamegon National Forest
P.O. Box 126, Highway 13
Glidden, Wisconsin 54527

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:

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

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

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

REFERENCES

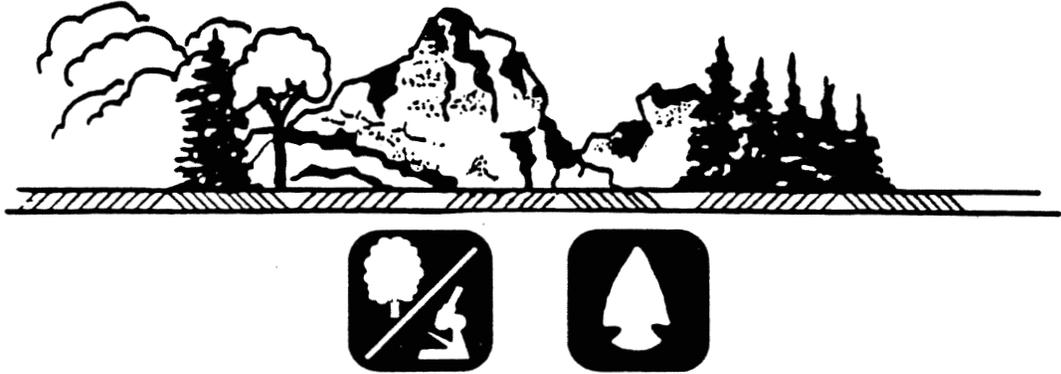
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SCIENTIFIC NAME	COMMON NAME
<i>Abies balsamea</i>	Balsam Fir
<i>Acer saccharum</i>	Sugar Maple
<i>Acer spicatum</i>	Mountain Maple
<i>Actaea pachypoda</i>	White Baneberry
<i>Adiantum pedatum</i>	Northern Maidenhair Fern
<i>Allium tricoccum</i>	Wild Leek
<i>Aralia nudicaulis</i>	Wild Sarsaparilla
<i>Aralia racemosa</i>	Spikenard
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit
<i>Aster lateriflorus</i>	Side Flowering Aster
<i>Aster macrophyllus</i>	Big Leaved Aster
<i>Aster puniceus</i>	Swamp Aster
<i>Athyrium angustum</i>	Northeastern Lady Fern
<i>Betula alleghaniensis</i>	Yellow Birch
<i>Botrychium matricariifolium</i>	Daisy-leaved Grape Fern
<i>Botrychium multifidum</i>	Leather-leaved Grape Fern
<i>Botrychium virginianum</i>	Rattlesnake Fern
<i>Brachyelytrum erectum</i>	Long Awned Wood Grass
<i>Caltha palustris</i>	Marsh Marigold
<i>Carex gynandra</i>	
<i>Carex intumescens</i>	Swollen Sedge
<i>Caulophyllum thalictroides</i>	Blue Cohosh
<i>Chrysosplenium americanum</i>	Golden Saxifrage
<i>Circaea alpina</i>	Small Enchanter Nightshade
<i>Clintonia borealis</i>	Bluebead
<i>Coptis trifolia groenlandica</i>	Goldthread
<i>Corallorhiza maculata</i>	Spotted Coral Root
<i>Corallorhiza trifida</i>	Early Coral Root
<i>Cornus alternifolia</i>	Alternate Leaved Dogwood
<i>Cornus canadensis</i>	Bunchberry
<i>Corylus cornuta</i>	Beaked Hazelnut
<i>Cystopteris fragilis</i>	Northern Fragile Fern
<i>Dirca palustris</i>	Leatherwood
<i>Dryopteris spinulosa</i>	Spinulose Wood Fern
<i>Equisetum arvense</i>	Field Horsetail
<i>Equisetum sylvaticum</i>	Woodland Horsetail
<i>Eupatorium maculatum</i>	Spotted Joe Pye Weed
<i>Fontinalis sp.</i>	
<i>Fraxinus americana</i>	White Ash
<i>Fraxinus nigra</i>	Black Ash
<i>Galium asprellum</i>	Rough Bedstraw
<i>Galium trifidum</i>	Small Bedstraw
<i>Gaultheria procumbens</i>	Wintergreen
<i>Glyceria striata</i>	Fowl Meadow Grass
<i>Gymnocarpium dryopteris</i>	Oak Fern
<i>Habenaria psycodes</i>	Purple Fringe Orchid
<i>Impatiens biflora</i>	Orange Jewelweed
<i>Laportea canadensis</i>	Wood Nettle
<i>Lonicera canadensis</i>	American Fly Honeysuckle
<i>Lycopodium annotinum</i>	Stiff Clubmoss
<i>Lycopodium lucidulum</i>	Shining Clubmoss
<i>Lycopodium obscurum</i>	Flat-branched Groundpine
<i>Maianthemum canadense</i>	Canada Mayflower
<i>Malaxis unifolia</i>	Green Adder's Mouth
<i>Matteuccia struthiopteris pensylvani</i>	Ostrich Fern

Mitchella repens	Partridge Berry
Mitella nuda	Small Bishop's Cap
Monotropa uniflora	Indian Pipe
Onoclea sensibilis	Sensitive Fern
Osmorhiza claytoni	Hairy Sweet Cicely
Osmunda cinnamomea	Cinnamon Fern
Osmunda claytoniana	Interrupted Fern
Ostrya virginiana	Ironwood
Oxalis montana	Wood Sorrel
Phegopteris connectilis	Narrow Beech Fern
Polygonatum pubescens	Downy Solomon's Seal
Polypodium virginianum	Rock-cap Fern
Populus grandidentata	Large-toothed Aspen
Populus tremuloides	Quaking Aspen
Prenanthes alba	Lions Foot
Prunella vulgaris	Lawn Prunella
Pteridium aquilinum latuisculum	Bracken Fern
Pyrola elliptica	Large-leaved Shinleaf
Quercus borealis	Northern Red Oak
Ranunculus abortivus	Small-flowered Buttercup
Rubus occidentalis	Black Raspberry
Rubus pubescens	Dwarf Raspberry
Rumex obtusifolius	Bitter Dock
Sambucus pubens	Red-berried Elder
Sanguinaria canadensis	Bloodroot
Scirpus cyperinus	Wool Grass
Scutellaria lateriflora	Mad-dog Skullcap
Smilacina racemosa	False Solomon's Seal
Solidago flexicaulis	Broad-leaved Goldenrod
Streptopus roseus longipes	Twisted Stalk
Thuja occidentalis	Arbor Vitae
Tilia americana	Basswood
Trientalis borealis	Starflower
Trillium cernuum	Nodding Trillium
Tsuga canadensis	Hemlock
Ulmus americana	American Elm
Uvularia grandiflora	Bellwort
Uvularia sessilifolia	Sessile Bellwort
Viola pubescens	Downy Yellow Violet

SUMMARY SHEET - BREEDING BIRD SURVEY		Area <u>Chequamegon Harbor</u>	WEATHER: See back of this sheet for categories.																				
Department of Natural Resources		Date <u>June 6, 1985</u>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"></td> <td style="width:50%; text-align:center;">Start</td> <td style="width:50%;"></td> <td style="width:50%; text-align:center;">Finish</td> </tr> <tr> <td>Temperature F.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Wind Speed</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sky</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Time</td> <td></td> <td></td> <td></td> </tr> </table>		Start		Finish	Temperature F.				Wind Speed				Sky				Time			
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Sky																							
Time																							
Scientific Areas Preservation Council		Total # Species _____																					
Box 7921 Madison, Wisconsin 53707		Total # Individuals _____																					
Observer's Name _____		USE BACK FOR MORE COMMENTS																					
Address _____																							
Phone # _____																							

Species	Visit	A	B	C	D	Species	Visit	A	B	C	D	Species	Visit	A	B	C	D
Common Loon						Yellow-billed Cuckoo						Solitary Vireo					
Pied-billed Grebe						Black-billed Cuckoo						Red-eyed Vireo					
Double-cr. Cormorant						Screech Owl						Warbling Vireo					
Great Blue Heron						Great Horned Owl						Black & White Warbler					
Green Heron						Barred Owl						Prothonotary Warbler					
Great Egret						Whip-poor-will						Golden-winged Warbler					
Black-cr Night Heron						Common Nighthawk						Blue-winged Warbler					
Eastern Least Bittern						Chimney Swift						Nashville Warbler					
American Bittern						Ruby-thr. Hummingbird						Northern Parula					
Canada Goose						Belted Kingfisher						Yellow Warbler					
Black Duck						Common Flicker						Magnolia Warbler					
Mallard						Pileated Woodpecker						Yellow-Rumped Warbler					
Gadwall						Red-bell. Woodpecker						Bl.-thr. Green Warbler					
Pintail						Red-headed Woodpecker						Cerulean Warbler					
Green-winged Teal						Yellow-b. Sapsucker						Blackburnian Warbler					
Blue-winged Teal						Hairy Woodpecker						Chestnut-sided Warbler					
Northern Shoveler						Downy Woodpecker						Pine Warbler					
Wood Duck						Eastern Kingbird						Ovenbird					
Redhead						Crested Flycatcher						Northern Waterthrush					
Ring-necked Duck						Phoebe						La. Waterthrush					
Lesser Scaup						Yellow-b. Flycatcher						Kentucky Warbler					
Common Goldeneye						Acadian Flycatcher						Mourning Warbler					
Ruddy Duck						Willow Flycatcher						Common Yellowthroat					
Hooded Merganser						Alder Flycatcher						Canada Warbler					
Common Merganser						Least Flycatcher						American Redstart					
Red-breast. Merganser						Wood Pewee						House Sparrow					
Turkey Vulture						Olive-sided Flycatcher						Bobolink					
Goshawk						Horned Lark						E. Meadowlark					
Sharp-shinned Hawk						Tree Swallow						W. Meadowlark					
Cooper's Hawk						Bank Swallow						Yellow-head. Blackbird					
Red-tailed Hawk						Rough-winged Swallow						Red-winged Blackbird					
Red-shouldered Hawk						Barn Swallow						Northern Oriole					
Broad-winged Hawk						Cliff Swallow						Brewer's Blackbird					
Bald Eagle						Purple Martin						Common Grackle					
Marsh Hawk (Harrier)						Gray Jay						Br.-headed Cowbird					
Osprey						Blue Jay						Scarlet Tanager					
American Kestrel						Northern Raven						Cardinal					
Ruffed Grouse						American Crow						R-breasted Grosbeak					
Prairie Chicken						Black-capped Chickadee						Indigo Bunting					
Sharp-tailed Grouse						Tufted Titmouse						Dickcissel					
Bobwhite						White-breast. Nuthatch						Evening Grosbeak					
Ring-necked Pheasant						Red-breasted Nuthatch						Purple Finch					
Gray Partridge						Brown Creeper						American Goldfinch					
Sandhill Crane						House Wren						Red Crossbill					
King Rail						Winter Wren						R-sided Towhee					
Virginia Rail						Marsh Wren						Savannah Sparrow					
Sora Rail						Sedge Wren						Grasshopper Sparrow					
American Coot						Gray Catbird						Henslow's Sparrow					
Killdeer						Brown Thrasher						Vesper Sparrow					
American Woodcock						American Robin						Lark Sparrow					
Common Snipe						Wood Thrush						Northern Junco					
Upland Sandpiper						Hermit Thrush						Chipping Sparrow					
Spotted Sandpiper						Veery						Clay-colored Sparrow					
Herring Gull						Eastern Bluebird						Field Sparrow					
Ring-billed Gull						Blue-gray Gnatcatcher						White-throated Sparrow					
Bonaparte's Gull						Golden-crowned Kinglet						Lincoln's Sparrow					
Forster's Tern						Ruby-Cr. Kinglet						Swamp Sparrow					
Common Tern						Cedar Waxwing						Song Sparrow					
Caspian Tern						Loggerhead Shrike						Additional Species:					
Black Tern						Starling											
Rock Dove						White-eyed Vireo											
Mourning Dove						Yellow-throated Vireo											



MANAGEMENT
PRESCRIPTION 8.4

The purposes of Management Prescription 8.4 are to:

- o Preserve the natural character of the Moquah Research Natural Area
- o Provide opportunities for education and scientific research. (Ref. Forest Service Manual 4063)
- o 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

8.4

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.

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

1900 Land and
Resource Manage-
ment 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.

Visual
Resources

Meet the visual quality objective of preservation.

7700 Transpor-
tation Systems

Develop no additional roads. Maintain or upgrade existing local roads as needed to comply with special area management objectives.

8.4