United States Department of Agriculture | Forest Service | WO

Reply to: 4060-3 (TMR)

Date: February 28, 1989

Subject: Spider Lake and the Alpine Gardens RNA's

To: Regional Forester, R-9

Congratulations. On February 21, the Chief approved the Spider Lake and the Alpine Gardens proposals as Research Natural Areas. These are the second and third proposals approved in 1989. Keep up the good work.

Herewith returned are copies of the two establishment records each containing a copy of the approved designation order.

STANLEY L. KRUGMAN, Director
Timber Management Research

Enclosures

USDA-FS R-9
RECEIVED
MAR 9 1989
RECREATION AND LANDS

Spider Lake

DESIGNATION ORDER

By virtue of the authority vested in me by the Secretary of Agriculture under regulations 7 CFR 2.42 and 36 CFR 251.23, I hereby establish the Spider Lake Research Natural Area. The Spider Lake Research Natural Area shall be comprised of the following lands: Generally parts of the: NWNW, NENW, Sec. 8, SW 1/4, SWSE, Sec. 5, T.43N, R.4W.

Regional Forester Floyd J. Marita recommended the establishment of the Spider Lake Research Natural Area in 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. The results of the Regional Forester's analysis are documented in the Final Environmental Impact Statement for the National Forest Land and Resource Management Plan and the Establishment Record which are available to the public.

The Spider Lake Research Natural Area will be managed in compliance with all relevant laws, regulations, and manual direction regarding Research Natural Areas. The Spider Lake Research Natural Area will be administered in accordance with the management direction identified in the Establishment Record. 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 designation order. Directions on pages IV-2, IV-92 of the Chequamegon National Forest Land and Resource Management Plan are replaced by the direction on pages 1,7 of the Establishment Record. This direction will remain in effect unless amended pursuant to 36 CFR 219.10. This is a non-significant amendment of the Chequamegon National Forest Land and Resource Management Plan.

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

Based on the environmental analysis documented in the National Forest Land and Resource Management Plan and the Establishment Record, I find that the designation of the Spider Lake esearch Natural Area is not a major federal action significantly affecting the quality of the human environment.

This decision is subject to appeal pursuant to 36 CFR 211.18. A Notice of Appeal must be in writing and submitted to:

Chief
USDA, Forest Service
P.O. Box 96090
Washington, D.C. 20013-6090

The Notice of Appeal must be submitted within 45 days from the date of this decision. Within five days of receipt, the Chief will transmit the Notice of Appeal and a copy of the Designation Order to the Secretary of Agriculture for review at the Secretary's discretion. The appeal will be deemed denied if the Secretary takes no action within ten days of receiving the appeal.

Chief

2/21/89
Date

R-9
NC
WISCONSIN
21 Feb '89
TMIS 00197

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

ESTABLISHMENT RECORD FOR SPIDER LAKE

RESEARCH NATURAL AREA WITHIN CHEQUAMEGON

NATIONAL FOREST, ASHLAND COUNTY, WISCONSIN

1980 SAF	acres	hr	1966 K
39	94	38.0	No K-equivalent

Commercial Forest Land
94 acres
P.6

U. S. GOVERNMENT PRINTING OFFICE : 1980 O - 309-842

FS-6200-7 (10/73)

EXHIBIT 4

USDA-FOREST SERVICE

PHOTOGRAPHIC RECORD

PHOTOGRAPHER: Eric Epstein

HEADQUARTERS UNIT: Chequamegon NF

LOCATION: Park Falls, Wisconsin

DATE SUBMITTED: November 2, 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. (1)	PERMANENT NO. (To be filled in by the WO) (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 (7)
1.			June 1986	Wisconsin Ashland Co. T43N, R04W, NW¼, Sec.08 SW¼, Sec.05	Canopy and shrub layer	
2.			June 1986	Wisconsin Ashland Co. T43N, R04W, NW¼, Sec.08 SW¼, Sec.05	Saxifraga, Caltha, Galium and Carix herb layer	
3.			June 1986	Wisconsin Ashland Co. T43N, R04W, NW¼, Sec.08 SW¼, Sec.05	Canopy of black ash	
4.			June 1986	Wisconsin Ashland Co. T43N, R04W, NW¼, Sec.08 SW¼, Sec.05	Caltha palustris, Onoclea sensibilis and Larix species herb layer and pool	
5.			June 1986	Wisconsin Ashland Co. T43N, R04W, NW¼, Sec.08 SW¼, Sec.05	Black ash and white spruce	
6.			June 1986	Wisconsin Ashland Co. T43N, R04W, NW¼, Sec.08 SW¼, Sec.05	Black ash and shrub layer	

1. Spider Lake Ash Swamp RNA - Canopy of black ash, dense shrub layer. SAF cover type 39.

2. Spider Lake Ash Swamp RNA - Herb layer composed of Saxifraga, Caltha, Galium, Lycopus and Rubus.

3. Spider Lake Ash Swamp RNA - Canopy of hardwood swamp dominated by black ash. SAF covertype 39.

4. Spider Lake Ash Swamp RNA - Herb layer of Caltha, Onoclea sensibilis, sedges (Carix spp.).

5. Spider Lake Ash Swamp RNA - Hardwood swamp of black ash, mountain maple. Conifer in background is white spruce.

6. Spider Lake Ash Swamp RNA - Hardwood swamp canopy of black ash, SAF cover type 39.

SIGNATURE PAGE

for

RESEARCH NATURAL AREA ESTABLISHMENT RECORD

Spider Lake 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 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: Paul Pedersen Date 11-25-88
Paul Pedersen
Research Natural Area Coordinator

Recommended by: Elizabeth Ohlrogge Date 11-28-88
Elizabeth C. Ohlrogge, District Ranger,
Glidden District

Recommended by: W. M. Byers Date 11-28-88
William M. Byers Jr. Acting Forest Supervisor,
Chequamegon National Forest

Recommended by: Dold L. Meyer Date 12/29/88
for Floyd J. Marita, Regional Forester, Eastern Region

Recommended by: R. D. Lindmark Date 1/9/89
Ronald D. Lindmark, Station Director,
North Central Forest Experiment Station

TITLE PAGE

Establishment Record for Spider Lake
Research Natural Area within The Chequamegon
National Forest, Ashland County, Wisconsin.

ESTABLISHMENT RECORD FOR SPIDER LAKE RESEARCH NATURAL AREA WITHIN THE CHEQUAMEGON NATIONAL FOREST ASHLAND COUNTY, WISCONSIN

INTRODUCTION

The significant natural qualities of this area were first documented in 1980 by Wisconsin Department of Natural Resources (WDNR) biologists conducting an inventory of natural areas in Ashland County, Wisconsin. Examination of a computer printout of old-growth forest stands on the Glidden District of the Chequamegon, followed by inspection of 1978 Wisconsin Department of Transportation (WDOT) aerial photographs, led to a brief field survey of the area in October 1980. This survey confirmed that the area did indeed possess natural features of high quality and would merit RNA status. The WDNR has given this biotic (natural) area a state-wide significance classification, which is their highest classification.

The 94 acre (37.6 ha) Spider Lake Research Natural Area (RNA) is located within the Chequamegon National Forest on National Forest System Lands. This area has been under multiple use management. It's location is isolated (Map 1) and there is no visible sign of timber harvesting or other management activities.

The bulk of this RNA represents a little-disturbed stand of Society of American Foresters cover type 39: Black ash-American elm-Red maple (*Fraxinus nigra-Ulmus americana-Acer rubrum*). (Photos 1,3)

Spider Lake 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 Spider Lake RNA site exhibited few signs of past disturbance.

LAND MANAGEMENT PLANNING

The Spider Lake RNA comes under Management Goal 8 in The Regional Guide for the Eastern Region which emphasizes the preservation of unique ecosystems for scientific purposes.

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

OBJECTIVES

The objectives of establishing research natural areas are to:

1. Preserve a spectrum of a pristine representative area that typify important black ash forest cover type.
2. Serve as reference areas for the study of succession.
3. Serve as baseline areas for measuring long-term ecological changes.
4. Serve as a control area for manipulative research.

JUSTIFICATION

Establishment of the 94 acre (37.6 ha) Spider Lake RNA will provide long term protection for a relatively large tract of little disturbed hardwood swamp (SAF cover type 39). Presently there is only one established RNA with SAF cover type 39 in the Lake States. Undisturbed extant examples of this type are very scarce in northern Wisconsin. Most existing stands are either very small or have been severely altered by logging, drainage, impounding or in some cases, succession to other forest types. The Spider Lake area will provide baseline information for measuring long term ecological change as well as provide information on the study of succession. Opportunities for research exist within the university establishment, experimental stations and the WDNR Bureau of Endangered Resources.

In Spider Lake RNA, black ash is present in a wide diversity of age and size classes. This is not a single generation, black ash dominated stand.

Despite the pioneering roles Wisconsin scientists have played in plant community ecology, hardwood swamps have received scant attention. Presently, this type is not well represented within Wisconsin's State Natural Areas. No stands of this type are formally recognized and protected on either the Chequamegon or Nicolet National Forests, or on other federal lands within Wisconsin. Spider Lake RNA is an excellent representative of this cover type and deserves RNA designation.

PRINCIPAL DISTINGUISHING FEATURES

The primary natural feature within Spider Lake RNA is a high quality stand of swamp hardwoods dominated by black ash. Various age and size classes of this dominant species are well represented. (Photo 5,6). Within this stand relative canopy coverage by black ash exceeds 80%. Canopy coverage was determined by visual estimation and corroborated by a limited number of point samples (Cottam, 1956). Absolute tree coverage within the RNA boundary is approximately 60%. Canopy associates include red maple (*Acer rubrum*), paper birch (*Betula papyrifera*), white cedar (*Thuja occidentalis*) and white spruce (*Picea glauca*).

The shrub layer is well-developed, consisting of species such as speckled alder (*Alnus rugosa*), mountain maple (*Acer spicatum*), red-osier dogwood (*Cornus stolonifera*) and winterberry (*Ilex verticillata*). The shrub layer is dense, making movement through the stand laborious.

Small pools of standing or slowly moving water are frequent within the ash forest. Tip-up pools generally contain 4 in. to 8 in. (10 cm to 20 cm) of water. Water flows through the stand from south to north, toward a small pond that drains to Spider Lake in the east.

LOCATION

Spider Lake RNA is located in the Glidden District of the Chequamegon National Forest in Ashland County, Wisconsin. (Map 1) Forest Supervisor's

Office is at Park Falls, Wisconsin. The location starts at Section corners 5, 6, 7, 8, T43N, R4W, thence N90°E, 1386', to point of beginning: thence N38°W, 1419', thence N78°E, 594', thence N7°E, 990', thence N90°E, 429', thence S0°E, 429', thence S73°E, 660', thence N69°E, 264', thence S72°E, 396', thence S86°E, 429', thence S80°E, 396', thence S0°E, 132', thence N85°W, 396', thence N90°W, 429', thence N77°W, 396', thence S0°E, 330', thence S73°E, 462', thence S50°E, 495', thence S52°W, 396', thence S33°W, 429', thence N73°W, 627', thence S47°W, 726', thence S23°E, 594', thence S83°W, 495', thence N20°W, 528', thence S52°W, 132', thence S22°W, 528', thence S73°W, 693', thence N45°E, 1594', to point of beginning. Total area is 94 acres (37.6 ha). Latitude is 46° 13' 45" north; longitude is 90° 53' 40" west. Elevation is 1460 to 1470 ft. (438 m-441 m)

More detailed locational information may be found on the attached USGS topographic quadrangle (Clam Lake, 7.5' series, 1971). (Map 3)

To reach the area, proceed north from the village of Clam Lake on county highway GG approximately 3 mi (4.8 km) to Forest Road 193, turn west, and continue approximately 3 1/4 mi (5.2 km) to Forest Road 344. Go north about 1 mi (1.6 km) to a freshly bulldozed (1986) logging road on the east side of FR 344. Walk east following the logging road until it turns north. Continue east 2,000 ft. (600 m) using compass and topographic map until the south end of the black ash swamp is entered. (Map 1)

AREA BY COVER TYPES (Map 2)

1. Society American Foresters Cover Types

Spider Lake RNA best fits SAF cover type 39: Black ash-American elm-Red maple. Black ash is the most abundant species in the canopy. It is reproducing well.

SAF no. 39: Black Ash-American Elm-Red Maple 94 acres (37.6 ha).

2. Kuchler Cover Type

This stand falls loosely into the northern hardwoods-fir forest of Kuchler (1969), but the stand is predominately black ash. There is no comparable Kuchler cover type to SAF cover type no. 39.

Kuchler no. 98: Northern Hardwood-Fir Forest 94 acres (37.6 ha).

PHYSICAL AND CLIMATIC CONDITIONS

1. Physical

Drainage patterns in this area of pitted moraine are rather poorly developed. Lakes, kettle depressions and swamps are abundant, separated by steeply sloped to moderately hilly forested uplands. The headwaters of the Chippewa and Marengo rivers are in this area.

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 NW 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% 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.

The mean annual precipitation is 32 in. (80 cm) of which 60 in. (150 cm) is snowfall.

The nearest weather station is in Mellen, Wisconsin, approximately 12 miles (19.2 km) to the northeast. The RNA has an elevation of 1460 ft. (438 m) and Mellen 1515 feet (454.5 m). Their weather data is based on the previous 20 years of actual measurements.

DESCRIPTION OF VALUES

1. Flora

The forest canopy is dominated by black ash. All size and age classes of this species, including seedlings and saplings, are present in the stand. Most ash trees are in the 5 to 11 in. d.b.h. (12.5 cm to 27.5 cm) size range, but individuals exceeding 15 in. d.b.h. (37.5 cm) occur. The largest black ash noted in the stand measured 22 in. d.b.h. (55 cm). Canopy associates are red maple, paper birch, white cedar and white spruce. The compartment record dated 1976 shows the year of origin to be 1869, which indicates that some of the older trees are approximately 120 years old.

The shrub layer is well-developed, consisting of species such as speckled alder, mountain maple, red-osier dogwood and winterberry. (Photos 2,4)

Characteristic herbs include cinnamon fern (*Osmunda cinnamomea*), sedges (such as *Carex trisperma*, *Carex crinita*, *Carex intumescens*), marsh marigold (*Caltha palustris*), swamp saxifrage (*Saxifraga pensylvanica*) and creeping snowberry (*Gaultheria hispidula*). Mosses are important components of the herbaceous flora, and need further study.

Exhibit 2 is a list of vascular plants present on the RNA.

Nomenclature follows Gleason and Cronquist (1963), Fernald (1950), or Little (1979). No endangered or threatened plant species are presently known to occur on the tract.

The vegetation surrounding the RNA does have an effect on the environment of the RNA. Wetter areas to the north and east are mostly speckled alder dominated shrub swamp, with pockets of swamp conifers composed primarily of black spruce (Picea mariana). Forested wetland to the west is composed mostly of white cedar (Thuja occidentalis) of good quality, mixed with hemlock (Tsuga canadensis) and yellow birch (Betula alleghaniensis). Adjacent uplands are maturing, second-growth stands of mixed hardwoods dominated by sugar maple (Acer saccharum). Many wildlife den trees are present in these upland stands.

2. Fauna

Exhibit 1 is a list of birds known to inhabit the RNA. Nomenclature follows Robbins, Bruun, and Zim (1966). Species characteristic of this area include the great-crested flycatcher (Myiarchus crinitus), veery (Catharus fuscescens), black and white warbler (Mniotilta varia) and northern water thrush (Seiurus noveboracensis).

Mammals known to inhabit the area include white-tailed deer (Odocoileus virginianus), snowshoe hare (Lepus americanus), black bear (Euarctos americanus) and red squirrel (Tamiasciurus hudsonicus).

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

Carbondale series: The soils are derived from ablation till and outwash of the woodfordian substage (Cary) till of the Chippewa lobe ice sheet. This RNA is within the ground moraine, washed till and outwash complex land type association. Upland soils surrounding the ash swamp are silt loams over loamy sand ablation till, somewhat poorly drained 0-5% slope. The black ash swamp itself is mapped less-acid bog, poorly and very poorly drained, 0-2% slope.

5. Lands

All lands involved in the RNA have been acquired from various owners under the Weeks Act. The mineral rights have been retained by the original owners. No known mineral leases have been signed in the vicinity of the RNA.

6. Cultural Resources

A cultural resource inventory has not been completed for the area and no cultural resources 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

There are no mining or exploration activities in the area. The Forest Service does not own the mineral rights. Presently there are no known mineral resources on the area and we would not attempt to obtain the RNA's mineral rights.

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

There are 94 acres (37.6 ha) of commercial forest land in the RNA. It will be removed from commerical timber production now and in the future. The Forest Plan standards indicate that management of black ash stands is done on a case by case basis. Generally we have not been cutting timber from these stands because reproduction is often difficult to obtain.

There are many wildlife openings and several swamp conifer and swamp hardwood stands adjacent to the RNA. The management activities which might occur in these stands and openings will not impact the RNA. There are two northern hardwood stands and one balsam fir stand adjacent to the RNA that have potential for management in future years. Any activities that may be proposed in these stands will be designed to have no impact on the RNA. This will ensure the continuation of the natural, unique qualities of the black ash stand.

4. Watershed Values

The RNA and adjacent stands do not have any unique or outstanding watershed values. This is a typical northern Wisconsin ash swamp.

5. Recreation Values

Because of the difficult access, high water table, tip-ups and dense shrub patches, human use is probably very light. A few hardy hunters and trappers may use the area.

6. Wildlife and Plant Values

Spider Lake 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 lora is rich and composed of native species. Neither composition nor structure of the stand show effects of recent human disturbance.

No threatened or endangered animal or plant species are known to occur in the area.

7. Special Management Area Values

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

The Forest Plan has identified 3 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 Plans

There are no roads in the area, nor are any roads planned to provide access.
The nearest road is a woods road approximately 2000 feet (600 m) west.

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.

Upon designation as a Research Natural Area, The Management Prescription 8.4 will be used as a guideline. Specific Management Prescription and standards and guidelines will have to be developed.

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

Light public recreation will be tolerated in the area. The recreation will not have an adverse impact on the scientific or educational values of the RNA.

Protection of the RNA requires no manipulation of the vegetation.

The forest outside the RNA will be managed to protect 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 8.4, 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
Chequamegon National Forest
USDA-Forest Service
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:

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
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. 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. Check List 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.

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

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

Ashland County

EXHIBIT

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: Spider Lake Ash Swamp
Date: 28 June 1986
Total # Species:
Total # Individuals:

USE BACK FOR MORE COMMENTS

WEATHER: See back of this sheet for categories.

	Start	Finish
Temperature F.	60	78
Wind Speed	1	2
Sky	1	0
Time	0612	0919

Species	Visit A	B	C	D
Common Loon				
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				
Gadwall				
Pintail				
Green-winged Teal				
Blue-winged Teal				
Northern Shoveler				
Wood Duck				
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	1			
Bald Eagle				
Marsh Hawk (Harrier)				
Osprey				
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				
Mourning Dove				

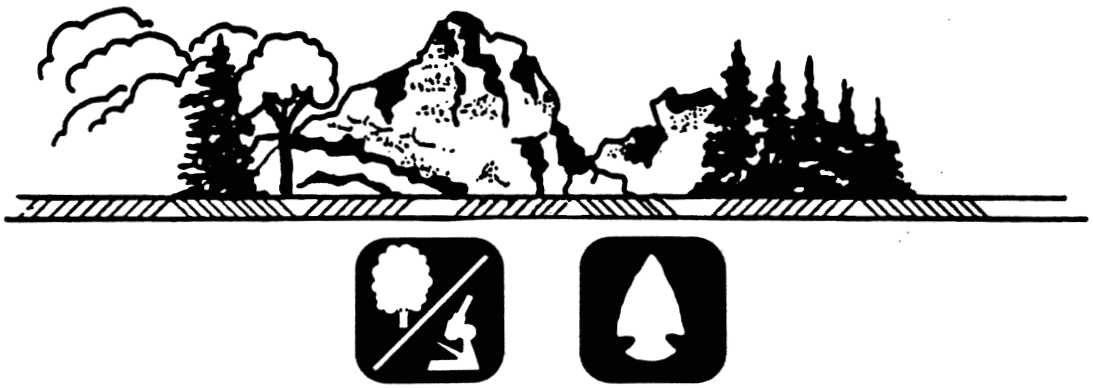
Species	Visit A	B	C	D
Yellow-billed Cuckoo				
Black-billed Cuckoo				
Screech Owl				
Great Horned Owl				
Barred Owl				
Whip-poor-will				
Common Nighthawk				
Chimney Swift	1			
Ruby-thr. Hummingbird				
Belted Kingfisher				
Common Flicker	2			
Pileated Woodpecker				
Red-bell. Woodpecker				
Red-headed Woodpecker				
Yellow-b. Sapsucker	*			
Hairy Woodpecker	1			
Downy Woodpecker				
Eastern Kingbird				
Crested Flycatcher	5			
Phoebe				
Yellow-b. Flycatcher	2			
Acadian Flycatcher				
Willow Flycatcher				
Alder Flycatcher				
Least Flycatcher				
Wood Pewee	1			
Olive-sided Flycatcher				
Horned Lark				
Tree Swallow				
Bank Swallow				
Rough-winged Swallow				
Barn Swallow				
Cliff Swallow				
Purple Martin				
Gray Jay	1			
Blue Jay	1			
Northern Raven				
American Crow				
Black-capped Chickadee	4			
Tufted Titmouse				
White-breast. Nuthatch				
Red-breasted Nuthatch	2			
Brown Creeper	1			
House Wren				
Winter Wren	3			
Marsh Wren				
Sedge Wren				
Gray Catbird				
Brown Thrasher				
American Robin	2			
Wood Thrush				
Hermit Thrush	1			
Veery	5			
Eastern Bluebird				
Blue-gray Gnatcatcher				
Golden-crowned Kinglet	1			
Ruby-Cr. Kinglet				
Cedar Waxwing				
Loggerhead Shrike				
Starling				
White-eyed Vireo				
Yellow-throated Vireo				

Species	Visit A	B	C
Solitary Vireo	1		
Red-eyed Vireo			
Warbling Vireo			
Black & White Warbler	5		
Prothonotary Warbler			
Golden-winged Warbler			
Blue-winged Warbler			
Nashville Warbler	2		
Northern Parula	4		
Yellow Warbler			
Magnolia Warbler			
Yellow-Rumped Warbler			
Bl.-thr. Green Warbler	2		
Cerulean Warbler			
Blackburnian Warbler			
Chestnut-sided Warbler			
Pine Warbler			
Ovenbird	1		
Northern Waterthrush	9		
La. Waterthrush			
Kentucky Warbler			
Mourning Warbler			
Common Yellowthroat			
Canada Warbler	1		
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	3		
Cardinal			
R-breasted Grosbeak			
Indigo Bunting			
Dickcissel			
Evening Grosbeak			
Purple Finch	1		
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	4		
Lincoln's Sparrow			
Swamp Sparrow	2		
Song Sparrow			
Additional Species:			

Rev. 5-78 * after survey period

SCIENTIFIC NAME	COMMON NAME
Abies balsamea	Balsam Fir
Acer rubrum	Red Maple
Acer spicatum	Mountain Maple
Actaea rubra	Red Baneberry
Alnus rugosa	Speckled Alder
Aralia nudicaulis	Wild Sarsaparilla
Arisaema triphyllum	Jack-in-the-pulpit
Asarum canadense	Wild Ginger
Aster macrophyllus	Big Leaved Aster
Betula alleghaniensis	Yellow Birch
Betula papyrifera	Paper Birch
Calla palustris	Water Arum
Callitriche sp	Starwort
Caltha palustris	
Cardamine pratensis palustris	Cuckoo Flower
Carex arctata	
Carex crinita	Fringed Sedge
Carex disperma	
Carex intumescens	Swollen Sedge
Carex trisperma	
Circaea alpina	Small Enchanter Nightshade
Cirsium muticum	Swamp Thistle
Clintonia borealis	Bluebead
Coptis trifolia groenlandica	Goldthread
Corallorhiza trifida	Early Coral Root
Cornus canadensis	Bunchberry
Cornus stolonifera	Red Osier Dogwood
Corylus cornuta	Beaked Hazelnut
Dryopteris cristata	Crested Wood Fern
Dryopteris intermedia	Intermediate Wood Fern
Equisetum fluviatile	Water Horsetail
Equisetum sylvaticum	Woodland Horsetail
Eupatorium maculatum	Spotted Joe Pye Weed
Fragaria virginiana	Wild Strawberry
Fraxinus nigra	Black Ash
Galium aparine	Annual Bedstraw
Galium triflorum	Sweet Scented
Gaultheria hispidula	Creeping Snowberry
Gaylussacia baccata	Huckleberry
Geum rivale	Purple Avens
Gymnocarpium dryopteris	Oak Fern
Ilex verticillata	Winterberry
Iris versicolor	Blue Flag
Laportea canadensis	Wood Nettle
Linnaea borealis	Twinflower
Lonicera canadensis	American Fly Honeysuckle
Luzula acuminata	Hairy Wood Rush
Lycopodium clavatum	Running Clubmoss
Lycopodium dendroideum	Round-branched Clubmoss
Lycopodium lucidulum	Shining Clubmoss
Lycopus sp	Water Horehound
Maianthemum canadense	Canada Mayflower
Mitella nuda	Small Bishop's Cap
Moneses uniflora	One-flowered Pyrola
Onoclea sensibilis	Sensitive Fern

Osmunda cinnamomea	Cinnamon Fern
Osmunda claytoniana	Interrupted Fern
Oxalis montana	Wood Sorrel
Parthenocissus inserta	Thicket Creeper
Phegopteris connectilis	Long Beech Fern
Picea glauca	White Spruce
Platanthera hyperborea huronensis	Tall Northern Bog Orchid
Poa palustris	Marsh Blue Grass
Pyrola secunda	One-sided Shinleaf
Rhamnus alnifolia	Alder Buckthorn
Rhus radicans	Poison Ivy
Ribes lacustre	Bristly Black Currant
Rubus pubescens	Dwarf Raspberry
Salix sp	Willow
Saxifraga pensylvanica	Swamp Saxifrage
Scutellaria galericulata	Marsh Skullcap
Sium suave	Water Parsnip
Smilacina trifolia	Swamp False Solomon's Seal
Sorbus americana	Mountain Ash
Streptopus roseus longipes	Twisted Stalk
Thuja occidentalis	Arbor Vitae
Trientalis borealis	Starflower
Trillium cernuum	Nodding Trillium
Tsuga canadensis	Hemlock
Ulmus americana	American Elm
Uvularia sessilifolia	Sessile Bellwort
Vaccinium myrtilloides	Canada Blueberry
Viola macloskeyi pallens	Smooth White Violet



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

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.
Visual Resources	Meet the visual quality objective of preservation.
7700 Transportation Systems	Develop no additional roads. Maintain or upgrade existing local roads as needed to comply with special area management objectives.

8.4