

United States  
Department of  
Agriculture

Forest  
Service

Eastern  
Region

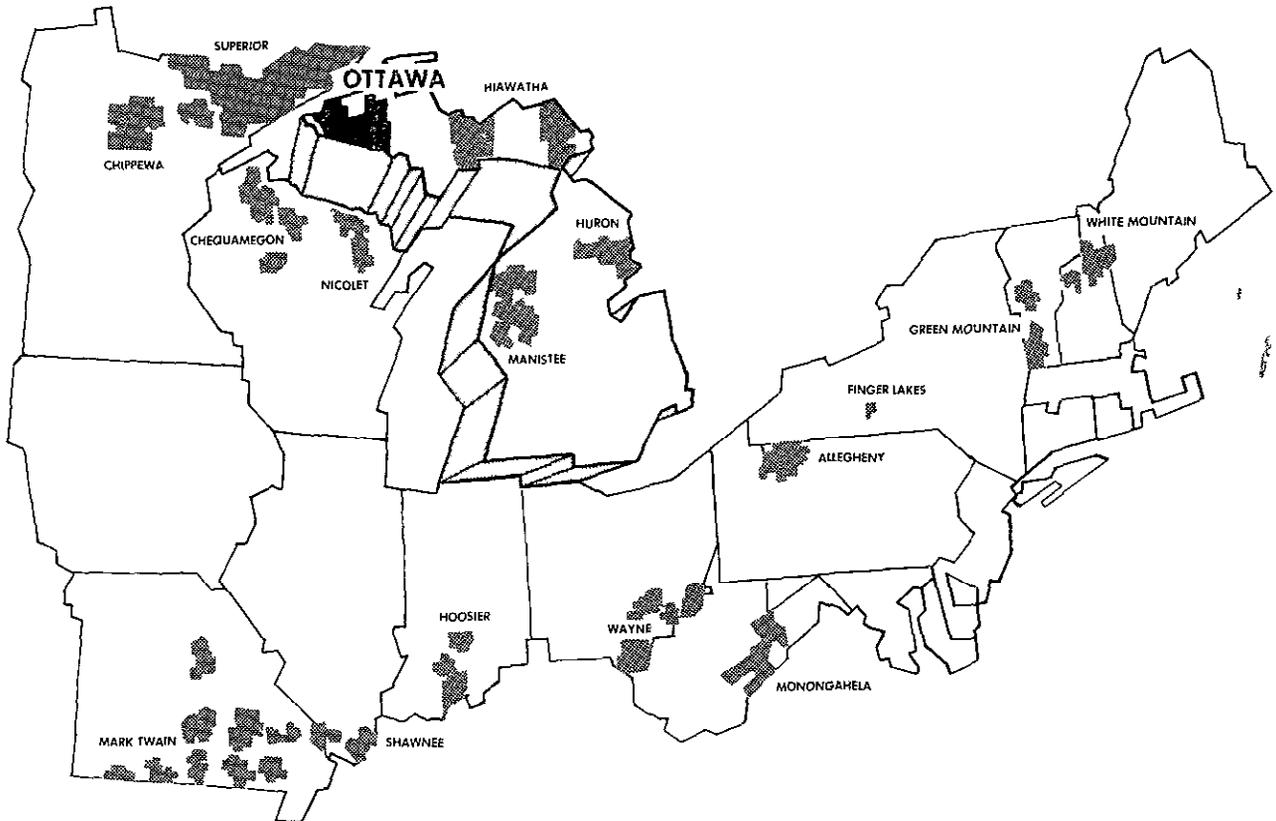


1986

# Final Environmental Impact Statement

## Land and Resource Management Plan

### OTTAWA NATIONAL FOREST



FINAL ENVIRONMENTAL IMPACT STATEMENT  
LAND AND RESOURCE MANAGEMENT PLAN  
OTTAWA NATIONAL FOREST

Baraga, Gogebic, Houghton, Iron, Marquette, and Ontonagon counties,  
Michigan

RESPONSIBLE AGENCY: USDA, Forest Service

RESPONSIBLE OFFICIAL: Regional Forester  
USDA-Forest Service, Eastern Region

FOR FURTHER INFORMATION CONTACT: Joseph Zylinski, Forest Supervisor  
Ottawa National Forest  
East US-2  
Ironwood, MI 49938  
906/932-1330

ABSTRACT: Eight alternatives for development of a Land and Resource Management Plan for the Ottawa National Forest are described and evaluated in this Final Environmental Impact Statement (FEIS). The alternatives respond to public issues and management concerns with different mixes of management activities. Each mix results in the production of different levels of goods, services, and uses and ultimately in a different condition of the Forest environment.

In brief, the eight alternatives are: 1) A maximization of present net value, 2) Continuation of current direction, 3) An increased capacity to support deer and ruffed grouse, 4) An emphasis on reduced road density and large areas of semiprimitive nonmotorized and semiprimitive motorized recreation opportunities, 5) No use of clearcutting or chemicals, 6) An increase in hardwood sawtimber while emphasizing uneven-aged management, 7) An emphasis on a combination of improved wildlife habitat and a mix of vegetative conditions and recreation opportunities, and 8) An emphasis on providing a variety of vegetative conditions and recreation opportunities while providing moderate amounts of wildlife habitat.

Alternative 7 is the Forest Service preferred alternative. The preferred alternative has been developed into a land and resource management plan which will guide the management of the Ottawa National Forest for the next 10 years and set the trend of management direction for a 50-year period.

# Preface

The regulations implementing the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974, as amended by the National Forest Management Act (NFMA) of 1976, require the preparation of a Forest Plan by each National Forest of the National Forest System. These regulations also require preparation of an Environmental Impact Statement for each of the proposed plans.

This Final Environmental Impact Statement (EIS) has been prepared following procedures established by Forest Service regulations for implementing the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations (40 CFR Part 1500).

The Forest Plan is a companion to this document. The Plan was prepared following procedures established for the National Forest System Land and Resource Management Planning Act (36 CFR Part 219).

For purposes of NEPA disclosure, this Final EIS and Forest Plan are treated as combined documents (40 CFR 1506.14).

The Final Environmental Impact Statement, the Final Environmental Impact Statement Appendices, Forest Plan and Record of Decision are available for review at the Forest Supervisor's office in Ironwood; the District Rangers' offices in Bergland, Bessemer, Iron River, Kenton, Ontonagon, and Watersmeet, and the libraries in Chapter VI-List to Whom Copies Were Sent of the Final Environmental Impact Statement.

# Summary

## Chapter I Purpose and Need

Chapter I presents the reasons for preparation of this Final Environmental Impact Statement (EIS). The nature of the decision to be made is explained; the documents and the analysis process used is described. The management problems which have driven the planning process are also described.

### Nature of the Decision

The purpose of the land and resource management plan is to provide for the multiple use and sustained yield of goods and services from the Ottawa National Forest. This is to be done in a way that maximizes long-term net public benefits in an environmentally sound manner.

The Ottawa National Forest has many resources for which there are competing demands or some uses that may conflict with other uses. In selecting the proposed plan of action, the mix of goods and services provided and the positive environmental effects must be weighed against the expenses required and the negative environmental effects. This is the nature of the decision to be made.

### Forest Planning Documents

The results of the land management planning process are presented in two documents, the Final Environmental Impact Statement (EIS) and the Forest Plan.

The Final EIS describes a range of alternatives considered, the mix of benefits, the cost, and the significant environmental effects of each. Each alternative could be the basis for a Forest Plan. One alternative, **alternative 7, has been identified as the preferred alternative.** This alternative has been further developed into the Ottawa National Forest Land and Resource Management Plan.

The planning period being considered for the FEIS is 10 to 15 years. Throughout this document projections beyond 10 to 15 years are listed for the purpose of showing effects. The decades beyond the first decade represent the projected situation if the alternatives were fully implemented for that time period.

In some instances, figures are presented as an average annual amount over the first two decades combined. In these cases, figures for individual decades are displayed in the Appendix Volume, Appendix B, Part 8.

---

Forest Location The Ottawa National Forest is located at the extreme western end of Michigan's Upper Peninsula. Its 928,441 acres lie in portions of Gogebic, Ontonagon, Iron, Houghton, Baraga, and Marquette counties.

---

Public Issues and Management Concerns Public issues were sought through public meetings, written comments, and individual contacts. These issues along with Forest Service management concerns helped identify needed or desired changes in the current management of the Forest.

The issues and concerns along with identified opportunities for resource development were grouped into five topics of primary importance called management problems.

These management problems guided the preparation of the Final EIS and Forest Plan. Each of the subsequent planning actions was geared to addressing these management problems.

The management problems guided the formulation of alternatives. Various responses to each of the management problems are possible. The alternatives described in the Final EIS represent a range of different combinations of possible responses to the management problems. Therefore, response to the management problems is a useful means of comparing alternatives.

---

Major Changes Made in Response to Public Comments Public comments on the Draft EIS and proposed Plan resulted in changes in the final documents and in this decision. These are discussed in Chapter XI of the Final EIS.

The major areas of change made in preparing the Final EIS and Forest Plan include:

Transportation In the Forest Plan, there will be a reduction in the amount of new local road construction. The proposed Forest Plan provided a reduction in road construction to 34 miles per year from the current level of 41 miles per year. In response to public comment, the level of road construction in the Forest Plan will be further reduced to about 30 miles per year. This reduction is possible, in part, due to increased emphasis on maximum use of existing roads and also due to the reduction in the allowable sale quantity. In addition, unneeded roads are to be identified and obliterated to prevent use.

The Forest Plan increases emphasis on closing roads to vehicular traffic to provide habitat conditions for wildlife species that require more remote habitat conditions and to provide nonmotorized recreation opportunities in all management areas. Particular emphasis is placed on the 164,000 acres that will be managed primarily for semiprimitive nonmotorized recreation

opportunities and the 256,000 acres being managed to provide habitat for the gray wolf.

## Wildlife

Endangered and threatened species habitat requirements were reevaluated (see Final EIS Appendix Volume, Appendix H). The Forest Plan was changed to provide suitable habitat including a 256,000-acre contiguous area for the gray wolf and other species requiring remote habitat. Management direction for this area provides for maintaining an adequate prey base through active management of the vegetation (habitat) and for a road density of less than one mile of open road per square mile.

Future habitat conditions in this area will emphasize remoteness along with vegetative management as recommended by the Fish and Wildlife Service's biological opinion on the proposed Plan.

The wildlife and fish management indicator species were reevaluated (see Final EIS Appendix Volume, Appendix I) and changes were made. The pumpkinseed sunfish was replaced by the smallmouth bass and northern pike. In addition, the loon, barred owl, and American bittern were added as management indicator species.

## Vegetation

The Forest Plan emphasizes uneven-aged management of the northern hardwood type. Sixty percent of the northern hardwood type subject to vegetation management will be managed uneven-aged, up from 43 percent in the proposed Forest Plan. Conversely, even-aged management was reduced from 57 percent to 40 percent of the northern hardwood type. Although uneven-aged management is emphasized, even-aged management will be utilized to increase browse within winter deer range and to maintain mid-tolerant hardwood tree species on the most suitable sites.

The Forest Plan reduces the allowable sale quantity from the 16.0 MMCF per year in the proposed Forest Plan to 13.1 MMCF per year. This reduction was made in response to comments received and a reevaluation of estimated demand for timber products.

The level of hardwood sawtimber production will remain at 1.8 million cubic feet (MMCF) per year (9.7 million board feet (MMBF)) as in the proposed Forest Plan. The remaining mix of timber products was changed in the Forest Plan to be more responsive to demand for individual products. Hardwood pulpwood was reduced from 5.3 MMCF per year to 4.3 MMCF per year (54,000 cords). Softwood products were reduced from 4.7 MMCF per year to about 2.9 MMCF per year (35,000 cords). Aspen products were reduced slightly from 4.2 MMCF per year to 4.1 MMCF per year (47,000 cords).

In the Forest Plan, the acreage of aspen is maintained at 138,000 acres, up from 126,000 acres in the proposed Forest Plan.

In the Forest Plan, the acreage of tree planting is 530 acres per year, an increase from the 330 acres per year in the proposed Forest Plan. However, the Forest Plan will still emphasize natural reforestation, and represent a substantial reduction in

tree planting from the current level, which has been about 1,000 acres per year.

The acreage of release was also increased in the Forest Plan from 250 acres per year to 900 acres per year. This was in response to comments, the increase in pine planting, and a reevaluation of current needs. This, too, is a reduction from the current level of about 1,300 acres per year.

Semiprimitive  
Areas

The Forest Plan provides a increase in semiprimitive nonmotorized acreage of 164,000 acres, up from 133,000 acres, in the proposed Forest Plan. The acreage of semiprimitive motorized management areas was increased from 46,000 acres to 51,000 acres. This results in a total increase of 36,000 acres of semiprimitive recreation opportunities from the proposed Forest Plan.

---

Summary of the  
Management  
Problems

---

Transportation  
Problem

The transportation management problem involves deciding what type of transportation system is needed to provide access for a variety of recreational opportunities and provide access and transportation of timber products in a timely manner. The transportation system must also be designed and managed to provide a variety of recreation settings.

Wildlife  
Problem

The wildlife management problem involves deciding what composition, arrangement, and age class structure of vegetation would be appropriate to provide habitat conditions for a variety of wildlife species. Habitat for threatened, endangered, and unique wildlife species, including areas with low amounts of road, needs to be provided. Providing improved habitat conditions for white-tailed deer and ruffed grouse is of particular local interest.

Vegetation  
Problem

The vegetative management problem involves deciding what vegetative composition should be maintained and what silvicultural systems will be utilized. These decisions influence several issues relating to vegetation management including wildlife habitat, clearcutting, chemical use, the type of wood products available, the overall amount and mix of timber products available over time, and the economic efficiency of managing the vegetation to provide a variety of products and uses.

Landownership  
Problem

The landownership management problem involves deciding what land adjustment policies should be developed. Forty percent of the land within the boundaries of the Ottawa National Forest is privately-, forest industry-, state-, or county-owned. Public and private lands are intermingled, creating administrative problems for all landowners. Corporate lands for the most part are large, contiguous areas. From the Forest

Service perspective, small parcels of land are difficult to locate, hard to reach, and inefficient places to spend time or money. Owners of small parcels within National Forest ownership are often concerned about continued access to their property and public use of nearby lands.

Some communities feel that National Forest landownership limits their expansion opportunities. Developers are also interested in the availability of some Forest Service land for private use.

The present options for resolving mixed ownership problems are land exchange between the affected owners and outright purchase of the property in question. Opinions concerning further acquisition of land by the USDA-Forest Service vary. Some favor such action while others oppose it strongly. Opposition is, in large part, based on the concern that public land erodes local tax bases and affects local economies by limiting the amount of land available for private development. The landownership problem was analyzed and the land adjustment policies developed. These policies are listed in Chapter IV-Forestwide Standards and Guidelines of the Forest Plan.

#### Wilderness Problem

The wilderness problem involves deciding which existing roadless areas on the Forest should be recommended for wilderness designation, wilderness study, or nonwilderness.

Reactions to the wilderness problem tend to vary sharply between local and regional interest. Some local residents view wilderness designation as a lockup of land that infringes on their traditional uses of these areas. Other local and regional interests see wilderness designation as needed protection for these areas and their unique characteristics.

## **Chapter II Alternatives, Including the Proposed Action**

The purpose of the Forest planning process is to ensure goods and services are provided in an environmentally sound manner so that the public receives the maximum net public benefit.

Judging which alternative provides the greatest net public benefit requires information about economic efficiency, resource trade-offs, nonpriced benefits, and public preference. Public preference is expressed through issues and concerns presented in the statements of the management problems.

The eight alternatives developed provide clearly different ways of responding to the management problems. The range of alternatives was driven by the range of responses necessary to address the major public issues, management concerns, and resource opportunities. Alternatives were defined that would represent a full range of response to the management problems.

Description of Alternatives

The following is a brief description of the alternatives that were considered in detail and the primary issues or concerns to which they responded. The alternatives and the process used to define them are described in more detail in Chapter II of this document.

- Alternative 1 This alternative maximizes present net value of priced benefits while meeting legal requirements. This alternative responds to a concern for economic efficiency.
- Alternative 2 This alternative continues the trend of current management direction into the future. This alternative is considered the "no action" alternative.
- Alternative 3 This alternative emphasizes wildlife habitat with particular emphasis on habitat for deer and grouse. This alternative responds to public concern for deer and grouse and for aspen timber products.
- Alternative 4 This alternative emphasizes semiprimitive recreation opportunities and wilderness. This alternative responds to wilderness and transportation problems.
- Alternative 5 This alternative emphasizes management of the Forest without the use of chemicals or even-aged management. It responds to the clearcutting and chemical use issues.
- Alternative 6 This alternative emphasizes uneven-aged management of hardwoods for hardwood sawtimber production and associated wildlife species. It responds to concerns about hardwood timber management and visual quality.
- Alternative 7 (preferred) This alternative emphasizes habitat for game and nongame species of wildlife. It provides a variety of vegetative conditions, recreation opportunities, and mix of timber products. It responds to wilderness, roading, game habitat, and even-aged/uneven-aged hardwood management issues. Alternative 7 is the preferred alternative.
- Alternative 8 This alternative emphasizes a variety of vegetative conditions and recreation opportunities while providing moderate amounts of habitat for game and nongame species of wildlife. It responds to the roading, even-aged/uneven-aged hardwood management, and wildlife habitat issues.

Comparison of Alternatives

Alternatives were compared in terms of their responses to management problems, the economic values produced, their contribution to Resources Planning Act (RPA) targets, and the positive and negative environmental effects.

Many factors were considered in identifying the alternative that comes closest to maximizing net public benefit. While some of the more quantifiable information may be considered in an objective manner, the nonquantifiable cost and benefits must be

considered subjectively, which ultimately is weighed in the process of selecting a preferred alternative.

Table S.1 displays selected measures of comparison of the economic values and responsiveness to management problems. Alternatives are ranked in order of decreasing present net value.

Table S.1  
Indicators of Responsiveness of Alternatives to Major Issues and National Concerns

Indicators of Responsiveness to Major Issues and National Concerns	Alternatives (in order of decreasing PNV)							
	Alt. 1	Alt. 4	Alt. 7	Alt. 8	Alt. 6	Alt. 2	Alt. 3	Alt. 5
<b>Economic Efficiency and Impact Concerns</b>								
PNV	(millions of 1978 dollars)							
	275	267	248	247	244	244	242	201
Average annual receipts (current level = 1.0)	(million dollars)							
First decade	1.7	1.4	1.3	1.3	1.3	1.0	1.2	0.4
Fifth decade	5.0	4.9	4.7	4.7	4.5	4.6	4.8	2.9
Average annual budget (current level = 3.9)								
First decade	3.8	3.8	4.2	3.9	4.0	3.8	3.8	3.5
Fifth decade	4.8	4.6	4.5	4.5	4.8	4.6	4.9	3.3
Average annual net cash receipts (current level = -2.9)								
First decade	-2.1	-2.4	-2.9	-2.6	-2.7	-2.8	-2.6	-3.1
Fifth decade	+0.2	+0.3	+0.2	+0.2	-0.3	0	-0.1	-0.4
Average annual payments to counties	(thousand dollars)							
First decade	787	787	787	787	787	787	787	787
Fifth decade	1238	1230	1136	1180	1121	1155	1206	787
Average annual nonmarket priced benefits								
First decade	9.4	9.4	9.2	9.3	9.2	8.8	9.1	8.8
Fifth decade	13.7	13.4	13.4	13.5	13.1	13.1	13.5	11.3
Total Forest-dependent 1/ income	(million dollars per year)							
	30	31	29	29	29	26	28	24
Total Forest-dependent 1/ employment	(jobs per year)							
	2,100	2,200	2,100	2,000	2,100	1,900	2,000	1,800
<b>Vegetation and Wildlife Management Issues and Concerns</b>								
Acres suitable for timber production	(thousand acres)							
	703	635	562	572	515	632	662	222
Acres of aspen type maintained	(thousand acres)							
	97	66	138	129	76	116	186	0
Acres of conifer thermal cover	160	158	150	152	164	137	140	141

Table S.1 (continued)

Indicators of Responsiveness to Major Issues and National Concerns	Alternatives (in order of decreasing PNV)							
	Alt. 1	Alt. 4	Alt. 7	Alt. 8	Alt. 6	Alt. 2	Alt. 3	Alt. 5
Acreage of even-aged hardwood management	(thousand acres) 289	221	113	125	48	272	258	---
	(percent of type) 72	58	40	44	23	81	90	---
Acreage of uneven-aged hardwood management	(thousand acres) 114	160	165	160	162	62	30	202
	(percent of type) 28	42	60	56	77	19	10	100
Average annual timber harvest volume	(million cubic feet per year)							
Aspen products (first 2 decades) (current level = 3.2) (demand level = 5.2)	2.7	2.7	4.3	4.1	3.1	3.2	4.6	0.7
Hardwood sawtimber (first 2 decades) (current level = 1.5) (demand level = 2.3)	2.9	2.5	2.1	1.7	2.0	1.6	1.4	0.9
Total timber (first 2 decades) (current level = 10.3) (demand level = 16.1)	16.0	16.0	16.0	15.9	15.0	14.0	15.9	7.0
Aspen products (first 5 decades) (demand level = 7.4)	4.2	3.5	5.3	5.9	2.7	4.1	6.2	0.3
Hardwood sawtimber (first 5 decades) (demand level = 2.7)	4.1	4.0	3.9	3.5	3.8	3.6	3.0	3.4
Total timber (first 5 decades) (demand level = 21.9)	21.9	20.9	21.2	21.2	19.4	20.1	21.6	8.7
Average annual aspen regeneration by wildlife opportunity area (first 2 decades)	(average annual acres)							
High opportunity area (53%)	530	660	1,660	1,980	500	1,310	3,350	---
Medium opportunity area (25%)	90	0	962	860	320	0	1,470	---
Low opportunity area (22%)	220	0	630	390	390	320	530	---
Total	840	660	3,252	3,230	1,210	1,630	5,350	---
Average annual reforestation acreage (2 decades)								
Artificial reforestation (current level = 962)	100	100	525	500	600	600	---	---
Natural reforestation w/site prep. (current level = 2,797 acres)	2,500	1,600	3,800	3,200	1,700	1,800	4,700	---
Average annual conifer release acreage (2 decades) (current level = 1,308)	---	50	650	150	700	150	---	---

Table S.1 (continued)

Indicators of Responsiveness to Major Issues and National Concerns	Alternatives (in order of decreasing PNV)							
	Alt. 1	Alt. 4	Alt. 7	Alt. 8	Alt. 6	Alt. 2	Alt. 3	Alt. 5
Average annual acreage of conversion to pine (2 decades)	(average annual acres)							
	---	---	325	200	500	550	---	---
Average annual temporary openings (2 decades)								
Clearcuts	2,060	2,330	4,860	4,450	3,660	3,270	5,740	---
(current level = 4,817)								
Other (seed/removal)	3,150	2,800	1,865	650	1,770	1,150	30	---
(current level = 350)								
Total	5,210	5,130	6,725	5,100	5,430	4,420	5,770	---
(current level = 5,167)								
<b>Transportation/Roading Issues</b>								
Distribution of ROS classes	(thousand acres)							
Roaded natural	639	472	711	670	592	820	721	555
Semiprimitive motorized	141	272	51	102	167	---	55	216
Semiprimitive nonmotorized	146	182	164	154	167	106	150	154
Average annual miles of road construction by standard (2 decades)	(miles per year)							
Total (current level = 41)	29	33	38	34	43	28	28	33
Winter-only	12	14	15	14	17	10	11	16
Winter/dry-summer	10	10	13	10	13	10	9	9
Summer-normal	7	9	10	10	13	8	8	8
<b>Wilderness Issue</b>								
Acreage recommended for wilderness study or designation	(thousand acres)							
	50.0	57.7	50.0	33.2	18.3	37.4	---	33.2

1/ Estimates are based on changes to the local economy as it existed in 1977.

Forest Plan alternatives offer a wide range of benefits, costs, and environmental effects. Environmental effects of the alternatives are described in detail in the Final EIS in Chapters II and IV and in Appendices B and C of the Final EIS Appendix volume.

These environmental effects may have positive or negative effects that result from management practices. The key indicator of change between alternatives is due directly or indirectly to the following major factors:

- The amount and relative mix of aspen, conifer, and hardwood vegetation.
- The mix of even-aged and uneven-aged management of the hardwood type.
- The mix of artificial and natural reforestation.
- The amount and location of local road construction and the mix of recreation opportunities provided.
- The number of areas and total acreage of the Forest recommended for wilderness designation or wilderness studies.
- The acreage of temporary openings.
- The economic efficiency in terms of present net value.

Measurements of these factors which provide benefits and respond to the management problems are listed in Table S.1.

Means to Mitigate  
Adverse Effects

Measures to avoid or minimize adverse environmental effects are included in the management area prescriptions. These prescriptions are included in Chapter IV of the Forest Plan. The prescriptions are an integral part of each alternative. That is, the management practices must be applied to specific areas according to the prescriptions. A detailed discussion of the mitigation provided, including some additional measures, can be found in Chapter IV of this document.

Monitoring  
Requirements

Monitoring and evaluation requirements are established in Chapter V of the Forest Plan to determine if planned actions produce the desired results. Some of the management practices will be observed and their effects recorded in order to ensure that the goals and objectives of the Forest Plan are being met. The monitoring results will be evaluated in order to determine whether changes are needed in the Forest Plan to make it more effective or to respond to changed or unexpected conditions.

## Chapter III Affected Environment

This chapter describes the existing environmental conditions that will or could be affected by any of the alternatives if they were implemented. The conditions are described as they were in the past 3 to 5 years (1980-1984). The changes in these conditions are described in Chapter IV-Environmental Consequences.

This chapter is organized by major components of the environment: physical, biological, economic, and social. Only those environmental elements that will be affected by one or more of the alternatives are described here.

---

### Introduction

---

The climate of the western end of the Upper Peninsula is normally cool with long winters and short summers. The average annual precipitation is 30 to 36 inches with an average annual snowfall of 74 to 142 inches. Snowfall usually begins about mid-November and stays on the ground through late April.

The length of the growing season is about 100 days.

---

### Physical Environment

---

#### Soil Productivity

There are three major categories of soil conditions on the Forest: 1) acid, sandy, dry soils formed on nearly level to sloping outwash plains, 2) acid and calcareous, loamy, moist soils developed on nearly level to moderately steep moraines, and 3) calcareous, clayey, dry-moist soils formed on nearly level to rolling glacial lake plains. Other landforms and soils important to management of the Forest include extremely steep river gorges and wet, organic deposits scattered across the Forest.

#### Minerals

Federal mineral ownership is only about 11 percent of the National Forest System lands; this is about 7 percent of all the lands within the Forest boundary. Therefore, the federal mineral estate will probably be of little importance to the overall supply of minerals coming from the Ottawa National Forest.

#### Visual Resource

The Forest offers a wide range of scenic variety including steep to level landforms, rock outcrops and ledges, lakes and rivers of all sizes and shapes, and a mix of vegetation dominated by northern hardwoods which naturally presents a variety of ever-changing scenes with the seasons.

Visual quality objectives are used to describe the degree of alteration that may be acceptable to the visual resource on any lands within the Forest or management area.

The need to maintain areas of high visual quality, particularly in areas of high sensitivity, while creating additional variety such as diversity of vegetative types, all within the desired condition for each management area, is currently recognized. It

bears a direct relationship to the location and amount of each management area prescription.

#### Cultural Resources

Cultural resources are the physical remains left by people who occupied or visited areas during historic or prehistoric times. These remains provide valuable insights into the lifestyles of past inhabitants and travelers through the region which includes the Ottawa National Forest. Although a varied cultural record has been left during the past 10,000 years of human use, the area has received minimal attention by professional archaeologists and the early cultural environment of the Forest is still largely unknown.

A total of 196,974 acres has been inventoried to date. These inventories have been done through contracts and through the use of cultural resource professionals and paraprofessionals. To date, a total of 1,230 historic and 40 prehistoric sites have been identified on the Forest.

Eventually, all cultural resources that may meet the criteria will be evaluated for their eligibility to the National Register of Historic Places. Cultural resources threatened by erosion, natural deterioration, vandalism, or adverse project effects are given first priority for mitigative measures and evaluation. All potentially significant cultural resources are protected until their significance is determined.

To date, five cultural resource sites have been formally evaluated. Only one, the White Deer Lake Camp located in the Cyrus H. McCormick Experimental Forest, is considered eligible for the National Register of Historic Places.

#### Fire

Wildfire is not a major problem on the Ottawa National Forest. High humidity, frequent rainfall, the predominance of broad-leaved trees, and normally cool temperatures combine to keep available fuel moist and limit the chance of ignition. Good vehicle access and an established prevention program have all contributed to keeping the fire problem minor.

#### Riparian Areas

An abundance of water is one of the greatest natural resources of the Forest. Its drainage is almost entirely to the St. Lawrence-Great Lakes system. A small portion of the south central section of the Forest is drained by headwaters of the Wisconsin River, a tributary of the Mississippi.

There are more than 500 lakes over 5 acres in size within the boundaries of the Forest. Most are located in the southern half of the Forest.

Wetlands occupy less than 10 percent of the Forest and include treeless bogs, emergent wetlands, lowland conifer and hardwood types, and balsam fir types.

Because of excessive road costs, very little road construction, if any, has occurred in riparian areas. Some roads have been relocated out of these areas in recent years. Presently,

vegetation management is limited in these areas due to low quality timber products, high costs, poor markets for these products, and in some cases, uncertainties about adequate regeneration.

Water  
Quality

Water quality is largely of high quality with a very minor local contamination from some residential, commercial, and agricultural sources. The Forest is in compliance with the federal and state laws governing potable water and wastewater disposal.

Air  
Quality

Air quality on the Forest and throughout the western Upper Peninsula is considered excellent (Class II-Clean Air Act, 1977). Temporary loss of air quality occurs on the Forest from prescribed burning and road use and construction activities that generate dust and sometimes smoke. This loss occurs in localized areas and for short periods of time.

The Forest coordinates with the state of Michigan to ensure that air pollution impacts to forest resources are minimized and to comply with air quality regulations.

Wild/Scenic  
Inventory  
Rivers

In August 1979, the President directed that federal agencies should protect wild/scenic inventory rivers. These are rivers identified by the Heritage Conservation and Recreation Service (HCRS) of the U.S. Department of the Interior as having potential for inclusion in the National Rivers System.

Within the state of Michigan, there are more than 60 rivers and segments of rivers identified for study in the January 1982 U.S. Department of the Interior list of possible candidates. Fifteen of these rivers and river segments are within the boundaries of the Ottawa National Forest.

Research  
Natural Areas

Research natural areas (RNAs) are a part of a nationwide network of ecological research areas. They are established for scientific and educational purposes. No manipulation of the vegetation will be done in them. The Ottawa National Forest contains one such RNA, the McCormick Research Natural Area. It is located in the Cyrus H. McCormick Experimental Forest, 30 miles northwest of Marquette, Michigan in Marquette County. Two proposed candidate research natural areas, Sturgeon River and Sylvania, are being protected until an evaluation is completed.

Roadless  
Areas

Roadless areas were inventoried during the second Roadless Area Review and Evaluation (RARE II). Four areas, Sturgeon River Wilderness Study Area, Little Silver Addition (now combined and known as Sturgeon Gorge Roadless Area), Sylvania, and Cascade Falls (now known as Norwich Plains Roadless Area) were identified to be studied for their wilderness potential.

As a result of public interest, one area, the Cyrus H. McCormick Experimental Forest was added to the Forest's roadless areas to be further evaluated for wilderness designation or study.

Currently, there are no designated wilderness areas within the Ottawa National Forest. However, there are three federal and one

state-legislated wilderness areas in the Upper Peninsula of Michigan.

#### Transportation and Roads

Many miles of road are found throughout the Forest; some areas contain many more roads than others. These roads, in the form of arterial, collector, and local roads, form a network. This network provides access needed for management and utilization of Forest resources for a variety of uses.

Some areas of the Forest are traversed by a high density of roads while others have very little. The average existing density is about 2.7 miles per square mile. The difference is due in part to the influence of landform and construction costs on previous management decisions. In addition, there are some special areas on the Forest with very few or no roads whatsoever.

Over the years, a system of railroad grades and local roads has resulted from the piecemeal approach to management of individual vegetative stands and opportunities. This process began even prior to the establishment of the Ottawa National Forest in the 1930s. Overall, there are many more roads than needed to serve long-term management objectives. Because of this piecemeal approach and the standard of many of these roads, the roads that do exist may not be in the proper location or standard to meet management objectives. Many of these roads are not open nor have they been used for passenger vehicle traffic in many years. This is due to natural conditions such as wet soils, ditches, down trees, and regrowth of vegetation that has been allowed to occur. These are best referred to as existing travelways. However, these travelways can and are being used for foot trails by some types of ORVs, and, when not in conflict with these uses, for location of new local roads.

If properly planned and managed, much of the long-term road network can utilize the existing system of roads, resulting in a decrease of existing road mileage. As a result, management objectives for each area can be achieved more efficiently. Building this efficient transportation network uses, to the extent desirable, existing roads and old travelways.

---

#### Biological Environment

---

#### Vegetation

The present Forest is predominantly a deciduous one. Northern hardwoods and aspen are the major cover types (see Table S.2). The majority of the aspen and balsam fir types are mature or overmature. The northern hardwood type consist primarily of immature poletimber and small sawtimber. There is an imbalance of age classes present. Mixed stands of deciduous-coniferous species are also common. The majority of stands are 40 to 79 years old.

Table S.2  
 Percentage of Total Forest Composition by Working Groups

Working group	Thousand acres	Percentage
Northern hardwoods	423	46
Aspen-paper birch	187	20
Balsam fir and jack pine	84	9
Spruce- red and white pine	58	6
Lowland conifer	56	7
Hemlock	28	3
Nonforest/Nonproductive	90	9
Total	926	100

The inherent site capabilities of the Forest and the variety of site conditions provide an opportunity to establish and maintain a variety of vegetative conditions.

Timber

There are approximately 828,400 acres of National Forest System land tentatively suitable for timber production. (Refer to Draft EIS Appendix Volume, Appendix B, Part 6, page B6-2, Timber Resource Land Suitability.)

Timber harvest has increased about 22 percent over a 10-year period, from 41 million board feet (MMBF) per year in the period 1970 to 1974 to about 50 MMBF per year in the period 1980 to 1984.

A substantial increase in volume sold in recent years reflects the improving markets for hardwood pulpwood due to the expansion of existing pulp mills and the construction of a new pulp mill that utilizes hardwood pulpwood. This trend is expected to continue.

Major increases were foreseen in all pulpwood markets with less significant changes in sawlog consumption.

Wildlife

There are more than 300 wildlife species believed to be resident on the Forest.

Wildlife species commonly hunted on the Forest are white-tailed deer, ruffed grouse, black bear, and snowshoe hare. Of these, deer and grouse are of primary local interest.

The number of wildlife species found on the Forest and their population level are determined to a large degree by the amount, quality, and variety of animal habitats available. Other factors affecting species populations are human and natural predation, weather, diseases, and natural population cycles. Many animal habitats are associated with vegetative communities that can be described by forest composition and age classes.

**Fish** About 62 fish species occur in 535 lakes and 1,535 miles of stream on the Forest. The most important species sought by fishermen are walleye, northern pike, smallmouth bass, largemouth bass, muskellunge, bluegill, yellow perch, pumpkinseed sunfish, brook trout, rainbow trout, coho salmon, king chinook salmon, lake trout, and brown trout.

Management of fish and fish habitat is jointly planned and carried out in cooperation with the Fisheries Division, Michigan Department of Natural Resources, with emphasis given to the management of lakes with existing recreation developments.

**Management Indicator Species** Thirteen management indicator species have been selected as representatives for estimating the effects of management on wildlife. They are considered to be ecological indicators of the habitat they represent.

**Endangered, Threatened, and Sensitive Species** There are no plant species known to occur on or near the Forest that are federally listed as endangered or threatened or that are recommended by the Smithsonian Institution as potentially endangered or threatened. Federally listed endangered and threatened animal species of the Ottawa National Forest are the gray wolf, bald eagle, and peregrine falcon.

**Range** Demand for grazing is very low and this situation is expected to continue. Presently, there are two special use permits issued for livestock grazing. Individual requests are considered on a case-by-case basis.

**Recreation** Dispersed recreation use activities on the Forest include trapping, hunting, fishing, hiking, canoeing, cross-country skiing, and snowmobiling. Some of the dispersed recreation facilities provided include 67 miles of the North Country National Scenic Trail, 41 miles of cross-country ski trails, 106 miles of hiking trails, more than 200 miles of snowmobile/all-terrain (ATV) trails, and more than 70 miles of canoe trails. In addition, the Forest has 106 developed recreation sites.

The range of recreation opportunity settings that can be provided on the Ottawa National Forest includes roaded natural, semiprimitive motorized, and semiprimitive nonmotorized.

Recreation sites and activities are also provided by other government agencies and private enterprise in mostly rural or roaded natural opportunity settings.

---

**Economic Environment** This section examines the economic environment of the Ottawa National Forest and surrounding area. Population, income, employment, and economic base are described for the area. Current budget levels by cost category, returns to treasury, and payments to counties are also described.

There have been major shifts in the economic environment of the area in recent years. Major industries have closed including a copper mine and processing mill, an iron mine, a major plywood

manufacturing plant, and a clothing manufacturing plant. A major railroad transportation system was terminated and another reduced services. Several other small manufacturing industries, service industries, and retail trade outlets also have closed or reduced services.

The major copper mine and processing mill may be reopened in the near future. The major plywood manufacturing plant is also being considered for reopening. The tourism and recreation-related industries continue to grow, however, at a slower rate than in the 1970s. Some of these industries are expanding to yearround operations, especially those associated with the major downhill ski areas in the extreme western end of the Upper Peninsula. Both within and outside the Forest, several forest-related industries are currently being constructed including a major national pulp mill. Others are expanding or considering new construction or expansion.

---

Social  
Environment

This section examines the social environment of the Ottawa National Forest and surrounding area. The social history, social groups, and lifestyles of individuals, groups, and/or organizations that affect and/or are affected by management of the Forest are described.

The Ottawa National Forest faces many different types of demands. Some of these demands are expressed by people who live within its borders and whose livelihood is tied to resources on the Forest. Other demands or interests come to the Forest from individuals or groups who visit the Forest, while yet another group holds interest in the Forest as a national resource with the ability to provide many benefits, some unique, such as wilderness.

Eight social groups representing the existing publics who are most affected by the management of the Forest were identified.

Not every person or business fits into these categories. The categories do not necessarily apply to specific persons. They are useful only to understanding this Forest's possible effect on the various publics using or interested in the Forest.

## **Chapter IV Environmental Consequences**

---

Cumulative  
Effects

Cumulative environmental effects of the alternatives may result from applying various combinations of management practices. The mix of prescriptions under each alternative produces different levels of resource outputs, goods, and services, including recreation benefits, wildlife habitats, and timber production.

Forestwide and management area standards and guidelines, explained in Chapter IV of the Forest Plan, provide a minimum level of protection for all resources and measures to mitigate adverse environmental effects. These minimum levels of

protection are incorporated into all management prescriptions. Therefore, none of the alternatives produce unacceptable environmental consequences. However, the level of environmental protection above the base line level differs among the alternatives.

Possible cumulative environmental consequences of the alternatives are listed below. Detailed discussions of possible environmental effects can be found in Chapter IV of this document.

Soil  
Productivity

The cumulative effects on soil productivity are primarily a result of the local road construction practice.

In the short term, alternatives 1, 2, 3, 4, 5, 7, and 8 have a lower impact than alternative 6. In the long term, all alternatives have a much lower impact than the current level.

Minerals

The local road construction and wilderness designation management practices constitute the cumulative effects on the minerals environmental condition. The impact of local road construction is similar to soil productivity and is directly related to the amount of local road construction. Wilderness designation will prohibit the use of common variety minerals and surface-disturbing exploration, and extraction of other federally owned minerals.

Alternatives 3 and 6 appear to represent a lower effect group for use of common variety minerals for local road construction and restriction of oil, gas, and hard rock exploration and extraction due to wilderness designation. Alternatives 1, 5, 7, and 8 represent a moderate effect group, and alternatives 2 and 4 represent a higher effect group.

Visual

The cumulative effects on visual resources result primarily from the obvious evidence of human-made corridors and temporary openings in the forest as the result of local road construction, harvest-clearcut, and harvest-shelterwood management practices.

Alternatives 2 and 3 have the greatest cumulative effect on the visual resources. As a result, the evidence of human disturbance in the Forest would be high under these alternatives. Under these alternatives, more than 70 percent of the Forest is assigned management area prescriptions that emphasize even-aged management which include harvest-clearcut and harvest-shelterwood management practices.

Alternative 5 would have the least cumulative effect on the visual resource. Evidence of human disturbance would be least evident under this alternative. Management area prescriptions that emphasize even-aged management are not assigned to management areas under this alternative. It would be easiest to meet visual quality objectives across the Forest under this alternative. However, vegetation variety would be less in the future.

Alternatives 1, 4, 6, 7, and 8 have low to moderate cumulative effects on the visual resource. Evidence of human disturbance in the Forest would be low to moderate across the Forest. Under these alternatives, 26 to 56 percent of the Forest is assigned management area prescriptions that emphasize even-aged management. The remaining area is assigned management area prescriptions that emphasize uneven-aged, special, or protection management.

Visual quality objectives could be met under these alternatives across the Forest. However, it would be easiest under alternatives 4, 5, 6, 7, and 8 because a balance of management area prescriptions emphasizing both even-aged and uneven-aged management is provided.

**Roadless Areas** There are four roadless areas on the Forest that were evaluated for recommendation for wilderness study or designation. The roadless areas are Sylvania, Norwich Plains, Sturgeon Gorge, and the Cyrus H. McCormick Experimental Forest.

The cumulative effect of roadless areas is the amount and location of roadless areas recommended for wilderness study or designation under any one alternative.

Areas recommended for wilderness study or wilderness designation are listed in Table S.3.

**Table S.3**  
Roadless Area Acreage Selected for Wilderness Designation or Wilderness Study

Alternatives	Roadless Area				Total
	Sturgeon Gorge (in net acres)	Sylvania	Norwich Plains	Cyrus H. McCormick Experimental Forest	
1	14,849	18,327	0	16,850	50,026
2	14,849	18,327	4,212	0	37,388
3	0	0	0	0	0
4	14,849	18,327	7,684	16,850	57,710
5	14,849	18,327	0	0	33,176
6	0	18,327	0	0	18,327
7	14,849	18,327	0	16,850	50,026
8	14,849	18,327	0	0	33,176

**Roads** The cumulative effects on the road system are the results from local road construction and wilderness designation management practices.

All alternatives except alternative 3 recommend wilderness study or designation for one or all roadless areas on the Forest. Refer to Table S.3 above. Under these alternatives, existing roads currently open for public and administrative use will be closed to motor vehicle use and converted to hiking trails where appropriate. Currently, some motor vehicle use for administrative use only is permitted in the Sylvania, Cyrus H. McCormick Experimental Forest, and Norwich Plains roadless areas. Also some roads in Sturgeon Gorge are open for public off-road vehicle use. Under wilderness management, motor vehicles can only be used under emergency situations or other special situations regarding the protection of adjacent lands such as preventing the spread of wildfire.

Alternatives 1, 2, and 3 have the lowest average annual miles of local road construction in the first two decades. This is the result of concentrating management activities where winter logging would be emphasized and because of the high amount of the Forest being managed for semiprimitive motorized and nonmotorized recreation opportunities. These areas would have less new local roads constructed in them.

Alternative 6 has the highest amount of local road construction. This is the result of emphasizing uneven-aged management to produce quality northern hardwood sawlogs. This kind of vegetation management requires a higher density of permanent roads. However, more than 20 percent of the Forest would be managed to provide semiprimitive motorized and nonmotorized recreation opportunities. Local roads in semiprimitive motorized areas would be closed to passenger vehicles. However, they would be available for use by all-terrain vehicles including snowmobiles.

Alternatives 4, 5, 7, and 8 would have a moderate average annual amount of local road construction.

## Vegetation

The long-term vegetative conditions that result in forest land suitable for timber production are in great part due to the cumulative effects of vegetation management practices including harvest-clearcut, harvest-thinning, harvest-selection, harvest-shelterwood, artificial reforestation, natural reforestation and release.

In addition, roads have a significant effect in terms of providing the access needed to manage the vegetation.

Wilderness designation will have a significant effect on vegetation. Within roadless areas recommended for wilderness study or designation, cover type and age class diversity will decrease with time and will establish and maintain a forest of mature and overmature trees of large size. However, from a Forestwide perspective, this old forest condition would increase the range of vegetative conditions. Roadless areas recommended for wilderness study or designation are listed by alternative in Table S.3.

The change in vegetative composition is most predictable for forest land suitable for timber production, where vegetative management practices are scheduled.

Table S.4 summarizes the acreage of forest land suitable for timber production by alternative and vegetative type.

Table S.4 Acres of Forestland Suitable for Timber Production by Alternative and Vegetative Type

Vegetative Type	Alternative							
	1	2	3	4	5	6	7	8
	(thousand acres)							
Even-aged mangement hardwoods	289	272	258	221		48	113	125
Uneven-aged management hardwoods	114	62	30	160	222	162	165	160
Aspen and paper birch	97	116	186	66		76	138	129
Spruce-red and white pine	63	71	65	61		98	62	54
Balsam fir and jack pine	82	57	64	78		76	55	67
Hemlock	23	17	22	13		18	14	15
Swamp conifer	35	37	37	36		37	15	22
Total	703	632	662	635	222	515	562	572

The mix of even-aged and uneven-aged hardwood management and the acreage of aspen type maintained are the major types on the forest and show the greatest variation by alternative.

Alternative 1, for example, places high emphasis on even-aged management of hardwoods and low emphasis on management of the aspen and paper birch type, but has a very low amount of uneven-aged hardwood management.

Alternatives 7 and 8 provide a somewhat equal mix of even-aged and uneven-aged management of hardwoods while maintaining moderate to high amounts of aspen and paper birch when compared to other alternatives.

Alternative 5 which has no even-aged management in any forest type results in many acres unsuitable for timber production and creates more overmature conditions and that could result in an increased risk of insect and disease outbreak when compared to other alternatives.

#### Timber Production

The level of timber production and the mix of species and products provided by an alternative are the result of the schedule of vegetative management practices.

Harvest practices such as clearcutting, thinning, selection and shelterwood cutting all contribute to the production of timber products.

Table S.4 summarizes the acreage of forest land suitable for timber production by alternative and vegetative type as shown in previous part of this chapter.

Some alternatives such as alternative 1 place a relatively high emphasis on even-aged management of hardwoods and low emphasis on management of the aspen type for timber production. Alternative 3 places emphasis on management of the aspen type for timber production. Alternatives 7 and 8 place a moderate emphasis on even-aged and uneven-aged management of hardwoods, along with moderate amount of aspen type management for timber production.

Table S.5 displays the volume of timber that would be produced (supplied) by alternative. The table shows the level supplied by species and product group. The table also shows the current level (1980-1984) of timber sold, and the anticipated level demanded by decade for each species/product group.

In some species/product groups and particularly in the total timber volume, the level of output by alternative is nearly the same. This is due to a limit on demand. In other words, several or all of the alternatives may satisfy demand for a particular product or total timber. For example, demand for total timber is satisfied in the first two decades in alternatives 1, 4, and 7.

#### Wildlife

Cumulative effects on wildlife are derived from local road construction, some vegetative management practices, and wilderness designation.

Alternatives 2, 3, 4, and 7 provide long-term productivity increases in habitats of wildlife species associated with openings and young growth, with increases in management of aspen and even-aged management of hardwoods. These species are represented by white-tailed deer and ruffed grouse.

Alternatives 1, 4, 5, 6, 7, and 8 provide long-term productivity increases of habitats of wildlife species associated with mature forests, as these forests continue to develop from the present dominant pole timber condition. These species are represented by northern goshawk, barred owl, and blackburnian warbler.

Alternatives 1, 3, 4, 5, 6, 7, and 8 provide long-term productivity increases of wildlife species associated with remote forests, as local road construction is reduced and/or road closures are adopted. These species are represented by black bear.

#### Endangered and Threatened Species

Management direction does not vary by alternative in management of the gray wolf, bald eagle and peregrine falcon habitat.

Table S.5  
Timber Volume Scheduled for Removal

Species/product group	Amount <sup>2/</sup> Demanded	Annual Volume Scheduled for Removal							
		Alternative							
		1	2	3	4	5	6	7	8
		(million cubic feet) <sup>1/</sup>							
<b>Hardwood sawtimber (current level=1.5)</b>									
Decade 1	2.1	2.1	0.8	1.1	1.4	0.5	1.7	1.8	1.2
2	2.5	3.6	2.5	1.7	3.6	1.4	2.3	2.4	2.9
3	2.5	3.9	3.9	1.8	3.9	3.9	3.9	4.1	3.2
4	3.0	5.0	5.0	4.4	5.0	5.0	5.0	5.0	5.0
5	3.3	6.0	6.0	6.0	6.0	6.0	6.0	6.2	6.0
<b>Hardwood pulpwood (current level=2.0)</b>									
Decade 1	3.3	3.8	3.8	3.8	3.8	3.8	3.8	4.3	3.8
2	5.6	6.5	4.8	6.5	7.2	5.6	7.8	7.4	6.8
3	6.8	5.4	6.0	10.0	5.2	2.9	4.4	6.5	9.0
4	8.0	7.7	9.9	8.4	6.1	4.0	4.8	7.0	7.0
5	8.9	3.2	3.6	4.2	2.8	2.7	5.0	2.8	2.4
<b>Aspen sawtimber and pulpwood (current level=3.3)</b>									
Decade 1	4.1	3.0	3.1	3.6	3.7	0.5	1.9	4.1	3.6
2	6.3	2.5	3.2	5.6	1.7	1.0	4.2	4.6	4.5
3	7.6	4.3	3.4	6.4	2.6	0.2	3.2	5.4	7.0
4	8.9	2.0	2.5	6.7	1.6	-	0.3	5.9	6.7
5	10.2	9.0	8.2	8.5	7.9	-	3.7	6.5	8.5
<b>Softwood sawtimber (current level=0.9)</b>									
Decade 1	0.7	2.2	1.3	2.1	2.2	0.1	2.2	1.6	2.1
2	0.7	3.6	3.7	3.0	3.6	0.5	2.4	2.6	3.2
3	0.8	5.8	5.3	2.7	5.3	1.4	5.9	4.5	2.9
4	0.9	8.2	4.5	4.7	8.8	2.5	8.0	5.9	5.8
5	1.0	8.5	7.4	7.8	8.6	0.6	8.8	8.1	7.6
<b>Softwood pulpwood (current level=2.6)</b>									
Decade 1	2.9	2.0	2.1	2.1	2.0	0.2	1.4	1.4	2.1
2	3.9	2.9	2.5	2.1	2.8	0.4	2.2	2.0	2.3
3	4.6	2.8	3.3	1.4	3.4	0.2	2.7	1.8	1.2
4	5.3	2.8	2.3	1.8	2.3	0.2	3.0	2.1	1.5
5	5.8	2.4	1.6	1.4	2.7	-	1.9	2.3	1.5
<b>Total timber (current level=10.3)</b>									
Decade 1	13.1	13.1	11.2	12.7	13.1	5.2	11.0	13.1	12.8
2	19.0	19.0	16.8	19.0	19.0	8.7	19.0	19.0	19.0
3	22.3	22.3	21.9	22.3	20.4	8.7	20.2	22.3	22.3
4	26.0	25.7	24.0	26.0	23.8	8.7	21.2	25.8	26.0
5	29.2	29.2	26.9	27.9	28.0	8.7	25.5	25.8	26.0
<b>Long-term sustained yield capacity</b>		31.0	29.0	28.0	29.8	9.7	25.5	26.7	26.0

<sup>1/</sup> A simplified conversion to million board feet can be made by multiplying each number by 5.4.

<sup>2/</sup> These figures represent initial estimates of demand which timber consumers have for timber products from the Ottawa. They have not been adjusted to reflect uncertainty nor do they reflect the possibility that other timber products may be acceptable substitutes in many cases. Refer to Final EIS Appendix B6-20-23 and B7-19-21 for additional discussions. In some cases, there is a level of supply slightly in excess of demand for an individual species/product. This is due to the production of this product at a level that helps satisfy demand for another product for which it is substitutable.

Recreation

The cumulative effect of local road construction and wilderness designation management practices is the amount of Recreation Opportunity Spectrum (ROS) classes and the amount and location of area recommended for wilderness designation or wilderness study that will be provided under any one alternative. Refer to Forest Plan Appendix F-Recreation Opportunity Spectrum Explanation for more information and definitions of the ROS system.

Each management area prescription represents a ROS class. As a result, the amount of ROS class in any alternative is directly linked to the acreage assigned to management area prescriptions.

The amount of Forest area assigned to ROS classes by alternatives is shown in Table S.6.

Table S.6  
ROS Classes by Alternatives

ROS Class	Current Level	Alternatives							
		1	2	3	4	5	6	7	8
		(thousand acres)							
Roaded natural	820	639	820	721	472	555	592	<b>711</b>	670
Semiprimitive motorized	-	141	-	55	272	216	167	<b>51</b>	102
Semiprimitive nonmotorized	106	146	106	150	182	154	167	<b>164</b>	154
(Acres of Total SPMN recommended for wilderness study or designation)	(0)	(50)	(37)	(0)	(58)	(33)	(18)	<b>(50)</b>	(33)

Economic

The cumulative effect on the economic environment of the Forest impact area is measured in terms of change in employment, income, and payments to counties. These effects result, directly or indirectly, from the expenditures to create the benefits ranging from market products such as timber to nonmarket recreation including hunting opportunities. The cash revenues generated and the budget requirements are also discussed.

The net effect on employment in the first decade by alternative is displayed in Table S.7.

Table S.7  
 Estimate of Forest-dependent Regional Employment in the First Decade

	Alternative							
	1	2	3	4	5	6	7	8
Forest-dependent employment	2,100	1,900	2,000	2,200	1,800	2,100	2,100	2,000

Employment associated with Forest goods and services is estimated at 1,900 for the current management or "no action" alternative. Other alternatives range from a loss of 100 jobs (alt. 5) to a gain of 300 jobs (alt. 4). The Ottawa National Forest is associated with slightly less than 10 percent of the total jobs in its impact area. Total regional employment during the 1977 base year was 22,900 person years per year.

The net effect on total regional income in the first decade by alternative is displayed in Table S.8.

Table S.8  
 Estimate of Annual Forest-dependent Income in the First Decade

	Alternative							
	1	2	3	4	5	6	7	8
Forest-dependent income	30	26	28	31	24	29	29	29

All alternatives would, according to the estimates above, account for at least 10 percent of regional income over the first 10 years of implementation. A group of alternatives comprising 1, 3, 4, 6, 7, and 8 would all exceed 10 percent. Total regional income during the 1977 base year was \$239 million.

Payments to local counties are estimated to be the same across all alternatives and would approximate the average of payments made over the last five years.

Returns to treasury includes all Forest cash receipts. The majority of these come from timber sale revenues. Other receipts come from campground receipts, minerals, and special use permits.

Table S.9 shows the estimated returns to the federal treasury by alternative in the first and fifth decade.

Table S.9  
Average Annual Forest Receipts for the First Decade

	Average Annual Receipts (1980-1984)	Alternative							
		1	2	3	4	5	6	7	8
		(thousands of 1978 dollars)							
First decade	981	1,688	1,047	1,203	1,421	417	1,313	1,295	1,257
Fifth decade		4,951	4,621	4,826	4,923	2,856	4,486	4,723	4,723

All alternatives, with the exception of alternative 5, produce a gain in dollars returned to the federal treasury when compared with the average over the years 1980 to 1984.

Alternatives 1, 4, 6, 7, and 8 produce significant increases in receipts when compared to the average. A second group made up of alternatives 2 and 3 produce positive but less significant increases.

All the alternatives show roughly a four-fold increase in returns to treasury between the first and fifth decades. This is due primarily to the increased output and value of timber, along with increased demand for timber products. This increased revenue over time far outstrips the expected increases in budget, which is discussed in the following section.

Forest  
Budget

The estimated budget expense in the first and fifth decades, of each alternative is displayed in Table S.10. Cost categories showing no significant change by alternatives were grouped in the "other" category.

Table S.10  
Budget Level by Cost Category for the First and Fifth Decades

	Average Annual Budget (1980-84)	Alternative							
		1	2	3	4	5	6	7	8
		(thousands of 1978 dollars)							
<u>Cost Category</u>									
Recreation									
First decade	449	342	402	425	356	432	342	437	432
Fifth decade		325	376	343	338	404	324	419	404
Vegetation management									
First decade	1,222	1,163	1,027	1,087	1,086	651	1,198	1,187	1,117
Fifth decade		2,278	1,993	2,406	2,062	861	2,210	1,943	1,986
Local road construction									
First decade	355	277	311	255	264	342	394	366	289
Fifth decade		230	272	198	208	101	183	162	188

Table S.10 (continued)

	Average Annual Budget (1980-84)	Alternative								
		1	2	3	4	5	6	7	8	
(thousands of 1978 dollars)										
Road Mtce., Collector Rds. Bridges, Dams & Facilities	788									
First decade		585	585	585	585	585	585	709	585	
Fifth decade		528	528	528	528	528	528	528	528	
Other										
First decade	1,084	1,478	1,478	1,478	1,478	1,478	1,478	1,478	1,478	
Fifth decade		1,398	1,398	1,398	1,398	1,398	1,398	1,398	1,398	
Total budget										
First decade	3,888	3,845	3,818	3,830	3,769	3,488	3,997	4,177	3,901	
Fifth decade		4,774	4,567	4,873	4,562	3,292	4,643	4,450	4,504	

In terms of total Forest budget level, only alternative 5 is estimated to have a significant difference from the average annual budget of the last 5 years. Other alternatives are within a range of \$120,000 less to \$110,000 more per year.

Almost all alternatives are estimated to have lower budget levels coupled with higher total cash receipts on the average over the next decade than the average annual budget and revenue amounts of 1980 to 1984.

Although the total Forest budget would increase over time in all of the alternatives, the increase in revenues far outstrips these increased costs. In addition, the level of nonmarket benefits is also expected to increase significantly over time, along with the increased demand for those benefits.

#### Social

A number of factors about the Forest or its management were identified as being of particular importance to various groups of Forest users. In this discussion, the alternatives are reviewed in light of these factors. No attempt is made to determine what alternative is best for individuals or groups. Instead elements of the Forest thought to have an effect on these groups were identified. Sets of alternatives were defined as having more or less of those elements.

More detailed information about the effects of all alternatives on the social environment can be found in Chapter IV, Part D of this document.

---

Comparison of  
Other  
Environmental  
Effects

---

Comparison of other environmental effects including:

- Relationship between short-term user and long-term productivity,
- Irreversible or irretrievable commitment of resources,
- Unavoidable adverse effects, and
- Mitigation common to all alternatives,

are summarized in Chapter IV, Parts E, F, G, and H, respectively in this document.

---

Means to Mitigate  
Adverse Effects

---

Measures to avoid or minimize adverse environmental effects are included in the management area prescriptions. These prescriptions are included in Chapter IV of the Forest Plan. The prescriptions are an integral part of each alternative. That is, the practices must be applied to specific areas according to the prescriptions. A detailed discussion of the mitigation provided, including some additional measures can be found in Chapter IV of this document.

The following paragraphs summarize the mitigation measures implemented for protecting environmental conditions.

Riparian Areas - Riparian area standards and guidelines minimize the adverse effects of management practices, particularly of road construction and timber harvesting on the visual quality of the area.

Visual Quality - Standards and guidelines for each management area are designed to minimize the adverse effects of management practices, particularly of road construction and timber harvesting on the visual quality of the area.

Soil Productivity and Soil Loss - Standards and guidelines by landtype associations for major earth-disturbing activities, such as road construction and timber harvesting, provide direction to ensure maintenance of soil productivity and minimization of soil losses.

Cultural Resources - Cultural resource surveys will be conducted in areas where earth-disturbing activities will occur and sites will be identified where modification of the proposed activity is needed in order to protect cultural resources. Procedures and requirements are contained in standards and guidelines applicable to all management areas.

Viable Populations of Native Vertebrates and Plants - Wildlife management standards for each management area will ensure that viable populations of native species are maintained Forestwide. Special direction addresses mitigating measures for endangered, threatened, and sensitive species.

Habitat Diversity - Standards and guidelines for timber and wildlife for each management area and the mix of management areas selected in each Forest Plan alternative help ensure the Forest will continue to maintain adequate wildlife habitat diversity.

Recreation Opportunities - Standards and guidelines for each management area and the mix of management areas selected in each Forest Plan alternative help ensure that management activities, such as road construction and timber harvesting, will not interfere with the Forest's ability to provide the appropriate mix of recreation opportunities.

Monitoring  
Requirements

To determine if planned actions produce the desired results, monitoring and evaluation requirements are established in Chapter V of the Forest Plan. Some of the management practices will be observed and their effects recorded in order to ensure that the goals and objectives of the Forest Plan are being met. The monitoring results will be evaluated in order to determine whether changes are needed in the Forest Plan to make it more effective or to respond to changed or unexpected conditions.

# Table of Contents

## Final Environmental Impact Statement

Abstract-----	i
Preface-----	ii
Summary-----	iii
Table of Contents-----	xxxiii
List of Tables-----	xxxviii
List of Figures-----	xxxxi

### Chapter I - Purpose and Need

Part A - Nature of Decision-----	I-2
Forest Planning Documents-----	I-2
Final EIS-----	I-2
Forest Plan-----	I-3
Forest Planning Process-----	I-3
Planning Records-----	I-5
Part B - Forest Location-----	I-6
Part C - Public Issues and Management Concerns-----	I-8
Issue Identification-----	I-8
Management Problems-----	I-8
Perspective on Management Problems-----	I-9
Problem 1 - Transportation-----	I-10
Problem 2 - Wildlife-----	I-13
Problem 3 - Landownership-----	I-15
Problem 4 - Vegetation-----	I-16
Problem 5 - Wilderness-----	I-17
Management Concerns Deferred or Resolved-----	I-18
Problem 3 - Landownership-----	I-18
Wild/Scenic Inventory Rivers-----	I-18
Bergland Ski Hill-----	I-19
Black River Recreation Area-----	I-19
Sylvania Recreation Area - Perimeter Area-----	I-20
Forest Service Timber Contracts and Firewood Availability-----	I-20
Lower Dam Impoundment-----	I-21
Public Involvement and Information Services-----	I-21
Major Areas of Comment and Change-----	I-21
Wilderness-----	I-21
Management of Northern Hardwoods-----	I-22
Timber Harvest Level and Mix of Timber Products-----	I-22
Management of the Aspen Type-----	I-23
Pine Planting and Release-----	I-23
Road Construction-----	I-23
Road Closures-----	I-24
Semiprimitive Recreation Opportunities-----	I-24
Remote Habitat-----	I-24
Management Indicator Species-----	I-25
Conclusion-----	I-25

## Chapter II - Alternatives

Net Public Benefit-----	II-3
Benefits-----	II-3
Costs-----	II-3
Effects-----	II-4
Arriving at Net Public Benefit-----	II-4
Role of Economics in Forest Planning-----	II-4
Present Net Value-----	II-5
Analysis of Economic Efficiency-----	II-5
Alternative Development Process-----	II-6
Themes for Defining the Goals of Alternatives-----	II-8
Full Range of Resources-----	II-12
Benchmarks-----	II-13
Benchmark Development-----	II-13
Benchmarks Summarized-----	II-13
Range of Benefits That Can Be Provided-----	II-15
Role of Benchmarks in Developing Alternatives-----	II-21
Development of Alternative Forest Plans-----	II-23
Wide Range of Alternative Forest Plans-----	II-24
Alternatives Considered but Eliminated from Detailed Study-----	II-26
Forest Plan Alternatives Considered in Detail-----	II-26
Where to Find Information about the Alternative Forest Plans-----	II-27
Summary of the Alternatives-----	II-28
The Forest Plan Alternatives-----	II-28
Display of Alternatives-----	II-30
Alternative 1 (Maximize PNV)-----	II-30
Alternative 2 (Current Direction/No Action)-----	II-34
Alternative 3-----	II-38
Alternative 4-----	II-42
Alternative 5-----	II-46
Alternative 6-----	II-50
Alternative 7 (Preferred)-----	II-54
Alternative 8-----	II-58
Comparison of Alternatives-----	II-65
Comparison Based on Management Problems-----	II-65
Comparison Based on Economic Values-----	II-85
Comparison to RPA Targets-----	II-109
Comparison of Environmental Consequences-----	II-109
Comparison of Other Environmental Effects-----	II-119
Means to Mitigate Adverse Effects-----	II-119
Monitoring Requirements-----	II-120

## Chapter III - Affected Environment

Overview-----	III-2
Physical Environment-----	III-3
Soil Productivity-----	III-3
Minerals-----	III-3
Visual Resource-----	III-4
Cultural Resources-----	III-5
Fire-----	III-7
Riparian Areas-----	III-7
Water Quality-----	III-8

Air Quality	III-9
Noise	III-10
Wild/Scenic Inventory Rivers	III-10
Research Natural Areas	III-11
Roadless Areas	III-12
Transportation and Roads	III-13
Biological Environment	III-17
Vegetation	III-17
Timber Production	III-22
Wildlife	III-25
Fish	III-31
Endangered, Threatened, and Sensitive Species	III-34
Range	III-36
Recreation	III-36
Economic Environment	III-40
Social Environment	III-46

#### Chapter IV - Environmental Consequences

Overview	IV-2
Part A - Causes of Environmental Effects	IV-4
Part B - Affected Elements of the Environment	IV-6
Part C - Environmental Effects of Management Practices	IV-9
Problem 1 - Transportation	IV-9
Management Practice: Local Road Construction	IV-10
Problems 2 and 4 - Wildlife and Vegetation	
Management	IV-16
Management Practice: Harvest-Clearcut	IV-17
Management Practice: Harvest-Thinning	IV-21
Management Practice: Harvest-Selection	IV-22
Management Practice: Harvest-Shelterwood	IV-25
Management Practice: Reforestation-Artificial	IV-28
Management Practice: Reforestation-Natural	IV-31
Management Practice: Release	IV-33
Management Practice: Precommercial Thinning	IV-35
Problem 5 - Wilderness	IV-36
Management Practice: Wilderness Designation	IV-36
Part D - Cumulative Effects	IV-40
Soil Productivity	IV-40
Minerals	IV-40
Visual	IV-42
Roadless Areas	IV-44
Roads	IV-44
Vegetation	IV-46
Timber Production	IV-50
Wildlife	IV-54
Endangered, Threatened, and Sensitive Species	IV-58
Recreation	IV-59
Economic	IV-60
Social	IV-65

Part E - Relationship Between Short-term Uses of the Environment and Long-term Productivity-----	IV-70
Soil Productivity-----	IV-70
Minerals-----	IV-70
Roadless Areas-----	IV-70
Timber Production-----	IV-71
Wildlife-----	IV-72
Endangered, Threatened, and Sensitive Species-----	IV-72
Recreation-----	IV-72
Part F - Irretrievable or Irreversible Commitment of Resources-----	IV-74
Soil Resource-----	IV-74
Mineral Resources-----	IV-74
Timber-----	IV-74
Part G - Unavoidable Adverse Effects and Mitigation Measures-----	IV-75
Part H - Mitigation Common to All Alternatives-----	IV-75
Soil Productivity-----	IV-76
Minerals-----	IV-77
Visuals-----	IV-77
Cultural-----	IV-78
Fire-----	IV-78
Riparian Areas-----	IV-78
Water Quality-----	IV-79
Air Quality-----	IV-81
Noise-----	IV-81
Wild/Scenic Inventory Rivers-----	IV-81
Research Natural Areas-----	IV-81
Roads-----	IV-81
Wildlife-----	IV-81
Fish-----	IV-82
Endangered, Threatened, and Sensitive Species-----	IV-83
Recreation-----	IV-83
Part I - Monitoring and Evaluation-----	IV-84
Monitoring-----	IV-84
Evaluation-----	IV-85
Chapter V - List of Preparers-----	V-1
Chapter VI - List to Whom Copies of the Statement Were Sent-----	VI-1
Chapter VII - Glossary-----	VII-1
Chapter VIII - References-----	VIII-1
Chapter IX - Index-----	IX-1
Chapter X - Appendices-----	X-1

Chapter XI - Response to Public Comment-----	XI-1
Introduction-----	XI-2
Purpose and Value of Public Comments-----	XI-2
Summary of Public Comment Analysis-----	XI-3
Index to Comments and Responses-----	XI-4
Index to Respondents-----	XI-4
Comments Received and Forest Service Responses-----	XI-64
Transportation-----	XI-64
Wildlife-----	XI-70
Landownership-----	XI-94
Vegetation-----	XI-95
Wilderness-----	XI-123
Recreation-----	XI-131
Miscellaneous-----	XI-150
Letters Received from Public Agencies and Elected Officials-----	XI-174

# List of Tables

## Final Environmental Impact Statement

Table 2.1	- Relationship Between the Problem Statements, Goals, and Key Measurements of the Goals-----	II-8
Table 2.2	- Benchmark Themes-----	II-14
Table 2.3	- Significant Results/Benefits of Alternative 1-----	II-32
Table 2.4	- Significant Results/Benefits of Alternative 2-----	II-36
Table 2.5	- Significant Results/Benefits of Alternative 3-----	II-40
Table 2.6	- Significant Results/Benefits of Alternative 4-----	II-44
Table 2.7	- Significant Results/Benefits of Alternative 5-----	II-48
Table 2.8	- Significant Results/Benefits of Alternative 6-----	II-52
Table 2.9	- Significant Results/Benefits of Alternative 7-----	II-56
Table 2.10	- Significant Results/Benefits of Alternative 8-----	II-60
Table 2.11	- Acreage Assigned to Management Area Prescriptions by Alternative-----	II-63
Table 2.12	- Present Net Value and Discounted Cost and Benefits of Alternatives-----	II-87
Table 2.13	- Present Net Value and Discounted Benefits and Cost by Resource Groups-----	II-90
Table 2.14	- Average Annual Cash Flows and Noncash Benefits in the First and Fifth Decade by Alternative-----	II-96
Table 2.15	- Indicators of Responsiveness of Alternatives to Major Issues and National Concerns-----	II-100
Table 2.16	- Roadless Area Acreage Selected for Wilderness Designation and Wilderness Study by Alternative-----	II-111
Table 2.17	- Acreage of Forest Land Suitable for Timber Production by Vegetative Type-----	II-113
Table 2.18	- Timber Volume Scheduled for Removal-----	II-115
Table 2.19	- ROS Classes by Alternative-----	II-116
Table 2.20	- Estimate of Forest-dependent Employment in the First Decade-----	II-116
Table 2.21	- Estimate of Annual Forest-dependent Income in the First Decade-----	II-117
Table 2.22	- Average Annual Forest Receipts for the First Decade-----	II-117
Table 2.23	- Budget Level by Cost Category for the First and Fifth Decades---	II-118
Table 3.1	- Roadless Areas Further Evaluated-----	III-12
Table 3.2	- Existing Wilderness Areas-----	III-13
Table 3.3	- Current Distribution of ROS Classes-----	III-15
Table 3.4	- Current Rate of New Road Construction and Reconstruction-----	III-16
Table 3.5	- Percentage of Total Forest Composition by Working Groups-----	III-18
Table 3.6	- Age Class Distribution for Tentatively Suitable Acreage of the Forest-----	III-18
Table 3.7	- Annual Acreage of Management Practice Accomplished During the Period 1980-1984-----	III-21
Table 3.8	- Volume of Timber Sold by Species/Product-----	III-22
Table 3.9	- Expected Timber Consumption (Demand)-----	III-23
Table 3.10	- Forestwide Value of Timber Sold by Year (1980-1984) and Average Annual Value for the 5-Year Period-----	III-23

Table 3.11	- Forestwide Value of Timber Harvested by Year (1980-1984) and Average Annual Value for the 5-Year Period-----	III-24
Table 3.12	- Wildlife Management Indicator Species of the Ottawa National Forest-----	III-29
Table 3.13	- Fish Management Indicator Species of the Ottawa National Forest-----	III-33
Table 3.14a	- Endangered and Threatened Species of the Ottawa National Forest-----	III-34
Table 3.14b	- Pland and Animal Species Recommended for Consideration for Inclusion on the R-9 List of Sensitive Species-----	III-35
Table 3.15	- Existing ROS Classes on National Forest System Lands-----	III-36
Table 3.16	- Existing Developed Recreation Sites-----	III-39
Table 3.17	- Some Recreation Sites or Areas Managed by Others Within and Adjacent the Ottawa National Forest-----	III-40
Table 3.18	- Total Forest Budget by Fiscal Year-----	III-43
Table 3.19	- Current Level Budget by Cost Category-----	III-44
Table 3.20	- Forest Receipts by Fiscal Year for the Period 1980 - 1984-----	III-44
Table 3.21	- Payments to Counties by Fiscal Year for the Period 1980 - 1984-----	III-45
Table 4.1	- Relationship of Practices to Management Problem-----	IV-5
Table 4.2	- Environmental Elements Affected by Management Practices-----	IV-7
Table 4.3	- Average Annual Miles of Local Road Construction per Year Over the First 2 Decades-----	IV-11
Table 4.4	- Average Annual Miles of Local Road Construction for the Fourth and Fifth Decades-----	IV-11
Table 4.5	- Average Annual Acreage of Clearcut Harvest by Decade-----	IV-18
Table 4.6	- Average Annual Acreage of Thinning Harvest by Decade-----	IV-21
Table 4.7	- Average Annual Acreage of Selection Harvest by Decade-----	IV-23
Table 4.8	- Average Annual Acreage of Shelterwood (Seed Cut) by Decade-----	IV-25
Table 4.9	- Average Annual Acreage of Harvest-Shelterwood (Removal Cut) by Decade-----	IV-25
Table 4.10	- Average Annual Acreage of Other Removal Cuts by Decade-----	IV-26
Table 4.11	- Average Annual Acreage of Reforestation-Artificial by Decade-----	IV-29
Table 4.12	- Average Annual Acreage of Reforestation-Natural (With Site Preparation) by Decade-----	IV-32
Table 4.13	- Average Annual Acres of Release by Decade-----	IV-34
Table 4.14	- Roadless Area Acreage Selected for Wilderness Designation or Wilderness Study-----	IV-37
Table 4.15	- Acres of Federally Owned Mineral Rights Not Available for Surface Disturbing Exploration of Minerals by Alternative by Roadless Area-----	IV-41
Table 4.16	- Percentage of Forest Assigned to Management Prescriptions by Alternatives-----	IV-43
Table 4.17	- Average Annual of Miles for First 2 Decades of New Local Road Construction by Standard-----	IV-45
Table 4.18	- Long-term Vegetative Composition-----	IV-47
Table 4.19	- Forest Land Unsuitable for Timber Production by Vegetative Type-----	IV-47
Table 4.20	- Forest Land Suitable for Timber Production by Vegetative Type-----	IV-48
Table 4.21	- Age Class Distribution of Vegetation Present and Long-term (150 years) for Suitable Acres-----	IV-49
Table 4.22	- Timber Volume Scheduled for Removal-----	IV-52
Table 4.23	- Estimated Average Annual Timber Revenues in the First and Fifth Decade-----	IV-53

Table 4.24	- Estimated Annual Budget Level for Vegetative Management and Local Road Construction in the First and Fifth Decade-----	IV-54
Table 4.25	- Probable Direction of Population Trend of Management Indicator Species, Long-term Outlook through Decade 5-----	IV-57
Table 4.26	- Management Prescription and ROS Class Relationships-----	IV-59
Table 4.27	- ROS Classes by Alternatives-----	IV-60
Table 4.28	- Estimate of Forest-dependent Employment in the First Decade-----	IV-61
Table 4.29	- Estimate of Annual Forest-dependent Income in the First Decade--	IV-62
Table 4.30	- Average Annual Forest Receipts for the First Decade by Alternative-----	IV-62
Table 4.31	- Budget Level by Cost Category for the First and Fifth Decades by Alternative-----	IV-63
Table 11.1	- Form and Number of Responses Received-----	XI-4
Table 11.2	- Index to Respondents-----	XI-5

# List of Figures

## Final Environmental Impact Statement

Figure 1.1	- Vicinity Map-----	I-7
Figure 2.1	- Steps Taken in Alternative Development-----	II-7
Figure 2.2	- ROS Classes by Alternative-----	II-67
Figure 2.3	- Miles of New Road Construction-----	II-68
Figure 2.4	- Present Net Value (PNV)-----	II-70
Figure 2.5	- Managed Aspen Acres and Acres of Thermal Cover-----	II-72
Figure 2.6	- Composition of Even-aged and Uneven-aged Managed Hardwoods-----	II-75
Figure 2.7	- Timber Volume to be Removed-----	II-76
Figure 2.8	- Aspen Regeneration by Wildlife Opportunity Area-----	II-78
Figure 2.9	- Forestwide Reforestation-----	II-80
Figure 2.10	- Conversion to Pine and Conifer Release-----	II-81
Figure 2.11	- Temporary Openings-----	II-83
Figure 2.12	- Recommended Wilderness/Wilderness Study-----	II-85
Figure 3.1	- Economic Impact Area-----	III-41

# Chapter I

## Purpose and Need



# Chapter I

## Purpose and Need

Chapter I presents the reasons for the preparation of this Final Environmental Impact Statement (EIS). Part A describes the nature of the decision to be made, the Forest planning documents, and the process used to prepare these documents. Part B locates the area to be covered by the decision. Part C identifies the management problems to be addressed by the Forest Plan and the opportunities to address those problems.

### Major Changes to Chapter I

A number of changes were made to the Draft Environmental Impact Statement.

The changes made to the Draft Environmental Impact Statement in Chapter I were primarily editorial in nature. A section that capsulizes the major public comments on the draft and changes made in response to those comments was added at the end of this chapter.

These changes and all those made throughout this document are due to the review of the draft documents by both the public and the Forest Service. The changes that are found in the Final Environmental Impact Statement are the result of attempts to make this document as responsive to the public as was possible.

## PART A. NATURE OF THE DECISION

The Forest Service has completed a land and resource management plan for the Ottawa National Forest as required by the Forest and Rangeland Renewable Resource Planning Act of 1974, as amended. The purpose of this land and resource management plan (called more simply, the Forest Plan) is to provide for multiple use and sustained yield of goods and services from the Ottawa National Forest. This must be done in a way that maximizes long-term net public benefits in an environmentally sound manner.

The overall long-term value to the nation of all outputs and positive effects (benefits) to be provided through the Forest Plan less all associated inputs and negative effects (costs) is its net public benefits. The reader must judge whether the preferred alternative (Forest Plan) provides greater net public benefits than do the other alternatives described in this document. This is because what may be a benefit to one person may be a cost to another and because net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index.

The Ottawa National Forest has many resources for which there are competing demands. These resources include wood, water, wildlife, wilderness, outdoor recreation, range, minerals, and scenery. The Forest Service must decide how to provide the maximum net public benefits from these resources in an environmentally sound manner. In doing so, the goods, services, and positive environmental effects must be weighed against the expenses required and negative environmental effects. This is the nature of the decision to be made.

### Forest Planning Documents

The results of the land management planning process are capsulized in two documents, the Final Environmental Impact Statement (EIS) and the Forest Plan.

---

#### Final EIS

---

This Final EIS describes a range of alternatives considered for providing public benefits and discloses their significant environmental effects. Each alternative could be the basis for a Forest Plan and each addresses, to some degree, the management problems described in Part C.

#### Preferred Alternative

Only one of the alternatives has been identified as the preferred alternative. This alternative has been further developed and described in a separate companion document titled "Ottawa National Forest Land and Resource Management Plan." The Forest Service prefers Alternative 7, which is the basis of the Forest Plan.

The planning period being considered for the Final EIS is 10 to 15 years. Throughout this document, projections beyond 10 to 15 years are listed for the purpose of showing effects. The decades beyond the first decade represent the projected situation if the alternatives were fully implemented for that time period.

In some instances, figures are presented as an average annual amount over the first two decades combined. In these cases figures for individual decades are displayed in the Appendix Volume, Appendix B, Part 8.

---

## Forest Plan

---

The role of the Forest Plan is to guide all natural resource management activities of the Ottawa National Forest for the next 10 years (1987 to 1996). The Forest Plan will be reviewed and revised as necessary every 10 to 15 years or earlier, whenever conditions or demands have changed significantly to warrant revision.

Included in the Forest Plan are a summary of the current management situation, a description of the goals for managing the Forest, the management prescriptions that will guide use of the management practices needed to achieve the desired conditions within each management area of the Forest, and the monitoring and evaluation requirements.

The Forest Plan also provides information on budget requirements for carrying out the schedule of work described in the plan.

## Forest Planning Process

Forest planning takes place within the overall framework provided by the implementing regulations of the Forest and Rangeland Renewable Resources Planning Act (RPA), as amended by the National Forest Management Act (NFMA), and by the National Environmental Policy Act (NEPA). The implementing regulations for NFMA may be found in Title 36, Code of Federal Regulations, Part 219 (36 CFR 219) and for NEPA, in the Council on Environmental Quality regulations in Title 40, Code of Federal Regulations, Part 1500 (40 CFR 1500).

National (RPA), Regional, and Forest planning form an integrated three-level planning process. The process requires a continuous flow of information and management direction among the three Forest Service administrative levels. Information from Forest planning flows upward to the National level for use in the RPA program where in turn information flows back to the Forest level. In this structure, Regional planning is a principal process for conveying information between the Forest and National levels.

The national RPA program recommends output targets to be achieved by Forest Service programs. The RPA program displays each Region's share of the national program in terms of output targets

and associated budgets. These RPA resource targets represent the benefits that are sought by society at a national level. Each Region tentatively distributes its share among its National Forests by displaying them in a Regional Guide. The Regional Guide also establishes, as standards and guidelines, the minimum requirements for management practices in order to ensure that Forest Plans are responsive to both national and regional issues and concerns about the benefits sought by society.

Regional standards and guidelines will govern the management practices used by the Forests. The RPA resource target distribution is not binding on individual Forests, but it is one set of resource targets that must be considered. Forest planning considers a range of alternatives in terms of how to provide the most public benefits, including those sought at the local level. At least one of the alternatives considered must respond to the tentative RPA objectives, thus ensuring that Forest planning considers the benefits to the general society (36 CFR 219.12(f)(6)). Regional standards and guidelines incorporated into Forest planning ensure response to benefits sought at the Regional level.

The planning process specified in the implementing regulations of NFMA was followed in developing the Forest Plan. The planning process uses an interdisciplinary approach to develop the plan and the alternatives to it (36 CFR 219.5). The planning actions described in the regulations (36 CFR 219.12(b) through (k)) and used in this Forest planning process are the following:

1. Identification of the issues, concerns, and opportunities;
2. Development of planning criteria;
3. Inventory data and information collection;
4. Analysis of the management situation;
5. Formulation of alternatives;
6. Estimation of effects of alternatives;
7. Evaluation of alternatives;
8. Preferred alternative recommendation (Plan);
9. Plan approval; and
10. Monitoring and evaluation of the Forest Plan.

The results of planning steps 1 through 8, above, are described in this document, except that the criteria (step 2) used to guide the process are part of the planning records. Refer to the Final EIS Appendix Volume, Appendices A - Issues, Concerns and Opportunities, and B - Description of Analysis Process for more detail on the results of these steps. Appendix A covers the identification of issues and concerns, management problems and consultation done with the public (step 1). Appendix B covers steps 2 through 8 of the analysis process.

This document was circulated for public review and comment. After the close of the comment period (see cover sheet), planning steps 1 through 8 were repeated as necessary in order to respond to the public comments.

The Final Environmental Impact Statement has been prepared in response to the public comments on the Draft EIS and filed with the Environmental Protection Agency (EPA). The Regional Forester used the Final EIS in making a decision on the Forest Plan. This decision is documented in the accompanying Record of Decision. The decision documented in the Record of Decision is subject to administrative review (appeal) in accordance with the provisions of 36 CFR 211.18.

The Forest Plan will then be implemented, subject to changes made in response to appeals, if any. Monitoring and evaluation (step 10) will be done at intervals established in the Forest Plan, Chapter V.

The Forest Plan will replace all previous resource management plans prepared for the Forest including the Sylvania Recreation Area and Cyrus H. McCormick Experimental Forest special management area plans. Upon final approval of the Forest Plan, all subsequent activities affecting the Forest, including budget proposals, are required to be in compliance with the Plan in accordance with 36 CFR 219.10(e). In addition, all permits, contracts, and other instruments for the use and occupancy of National Forest System lands must be in conformance with the Forest Plan, per 16 United States Code (USC) 1604(i).

The Final EIS prepared for the Forest Plan will be used in future environmental analysis and documents through tiering in accordance with 40 CFR 1502.20 and 1508.28. Tiering means that environmental analyses and documents prepared for projects arising from the Forest Plan will refer to the EIS, Forest Plan, and associated documents rather than repeat information. Environmental analyses for specific projects will, therefore, be shorter and concentrate on issues, concerns, and opportunities unique to the project.

---

Planning  
Records

All of the documents, files, and other planning records that chronicle this Forest's planning process are available for inspection during regular business hours at the Ottawa National Forest Supervisor's Office, East US-2, Ironwood, Michigan 49938. These planning records detail information and decisions used in developing the Forest Plan as required in 36 CFR 219.10(h). A glossary and other information that will help the reader understand the Forest Plan and Final EIS may be found in Chapter VII of the Final EIS.

Readers should save their copies of this Final EIS and Forest Plan. There may be supplements and amendments to them. These will be made if necessary to respond to changing conditions or to improve management direction.

## **PART B. FOREST LOCATION**

The Ottawa National Forest is located at the extreme western end of Michigan's Upper Peninsula. Its 928,441 acres (as of 9/30/85) lie in portions of Gogebic, Ontonagaon, Iron, Houghton, Baraga, and Marquette counties.

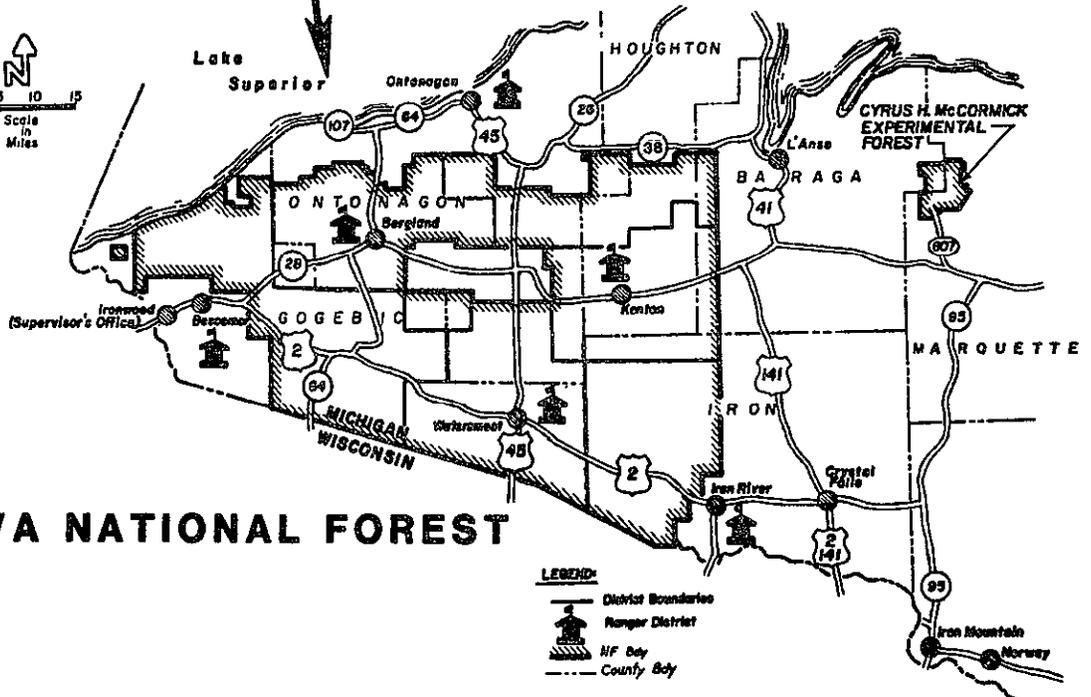
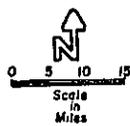
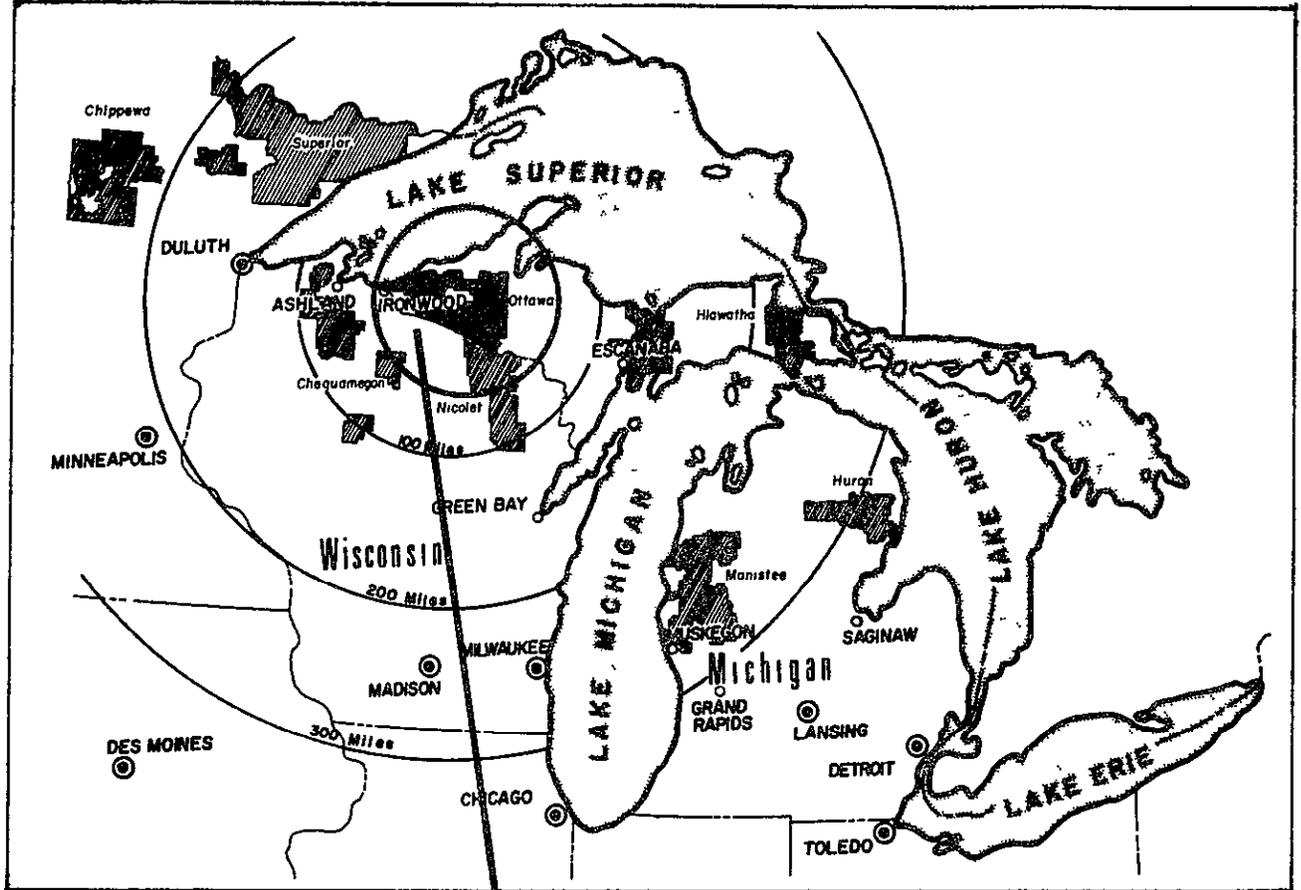
The Forest is within a day's drive of Detroit, Green Bay, Milwaukee, Madison, Chicago and St. Paul-Minneapolis. It borders Lake Superior on the north and the State of Wisconsin, including the Nicolet National Forest, on the south.

Principal access routes to the Ottawa National Forest are US Highways 45 and 51 from the south, US Highway 2 from the east and west, and Michigan State Highway 28 from the east. Figure 1.1 shows the vicinity of the Forest.

**FIGURE 1.1**

**OTTAWA NATIONAL FOREST  
VICINITY MAP**

**NATIONAL FORESTS IN THE GREAT LAKES STATES**



**OTTAWA NATIONAL FOREST**

## **PART C. PUBLIC ISSUES AND MANAGEMENT CONCERNS**

Identification of public issues and management concerns initiated the preparation of the land and resource management plan for the Ottawa National Forest. This crucial step defined the range of topics to be covered in the Final EIS and Forest Plan and shaped the subsequent analysis. Because the issues and concerns are so central to the land management planning process, they are the subject of the remainder of Chapter I.

### **Issue Identification**

Public issues were identified through various types of citizen participation including public meetings, comment forms, and individual contacts. Issues submitted by the public, as well as concerns from within the Forest Service, helped the Forest to assess the necessity for changing the current management of the Ottawa National Forest. These public issues and Forest Service concerns did confirm the need for change and also guided the Forest Service in preparation of the EIS and accompanying Forest Plan. All the planning steps are responsive to the issues and concerns identified.

Some issues were thought to be beyond the jurisdiction of the Forest Service, adequately covered in existing plans or laws, or best handled case-by-case in site-specific evaluations. These issues are not addressed in the Forest Plan and Final EIS.

The remaining issues and concerns represented a desire for change in current management. They were grouped into five topics of primary importance called management problems. The management problems guided the preparation of the Final EIS and accompanying Forest Plan. Each of the subsequent planning actions was geared to addressing these management problems.

Appendix A, in the Final EIS Appendix Volume lists all the issues and concerns identified, explains the process used to identify them, and describes their disposition in the planning process. Additional concerns about individual roadless areas, related to the wilderness problem, can be found in Appendix C of the Final EIS Appendix Volume.

### **Management Problems**

A management problem is a statement summarizing conflicting values about management of the Forest or the desired outcomes of Forest management. It was formulated from the individual issues and concerns raised in public participation activities.

The management problems guided the formation of alternatives. While one specific alternative may provide the "best" response to a single problem, each alternative satisfies all problems to some degree. The difference between the "best" response and that provided by some other alternative involves recognizing trade-offs in the degree to which they respond to all of the problems. The alternatives described in this Final EIS represent a range of different combinations of possible responses to the management problems. Therefore, response to the management problems is a useful means of comparing alternatives. This is necessary in order to determine overall public benefit.

The remainder of this part discusses why people are concerned about the Ottawa National Forest. The first section is an examination of the actual or potential changes that concern people, giving perspective to the management problems. The management problems are then stated, including a summary of the opportunities to address the problem.

A more detailed description of how management problems were developed can be found in Appendix A of the Final EIS Appendix Volume. Detail on the benchmark analyses made in support of the opportunity statements can be found in Appendix B of the Final EIS Appendix Volume.

---

Perspective on  
Management  
Problems

---

Analysis of the issues and concerns showed that people are concerned with potential changes in the management of the Ottawa National Forest that could affect their economic well being or their traditional leisure pursuits. No consensus exists on what changes, if any, are needed or desired.

The people of the western Upper Peninsula have had close ties to the land since the area's settlement in the 1880s. Rich timber and mineral resources attracted the original immigrants and remained a mainstay of the local economy. The lifestyle that evolved is also outdoor-oriented. Hunting and fishing are popular leisure pursuits and even firewood gathering is a form of recreation with a serious purpose.

While logging and related forest industries have always been a part of the economic base, their importance as a source of jobs and income has increased as copper and iron mining jobs have disappeared. However, the distance from the wood products market has prevented the forest industry from filling the gap left by the closure of the mines.

The timber of the Ottawa National Forest remains a primary source of supply for the local and regional hardwood sawtimber and softwood and aspen pulp industry. A recent emphasis on tourism promotion has increased the economic importance of the Forest's campgrounds, boat landings, roads, and trails.

Private individuals, forest industries, and state and county government own nearly 40 percent of the land within the Ottawa National Forest boundaries. Thus, the forests, streams, and lakes of the Ottawa National Forest are very important to the area as a source of forest products and recreation opportunities. The land for hunting, fishing, and recreation and the road and trail system to reach those opportunities are assets to the lifestyle of local residents and an attraction to area visitors. Any forest management policies that significantly change traditional uses are likely to meet resistance.

This high interest in the outdoors has not generated intense conflicts between different uses because of the sparse population and abundant supply of resources. The Ottawa National Forest is not subject to the intense recreation use that occurs on National Forests closer to urban population centers.

Problem 1 -  
Transportation

The transportation management problem involves deciding what form of transportation network is needed to provide access for a variety of recreational opportunities and provide access and transportation of timber products to market in a timely manner.

Over 3,900 miles of road cross the Ottawa National Forest. Some are major highways; others are more primitive appearing roads through the woods. Most are important to some citizen for timber harvesting, recreation, or access to private land.

Essentially the collector and arterial road system is in place. The remaining roads on the Forest are local roads.

Of greatest interest to timber harvest is the collector and local road system that branches off from the major highways. The standard to which these roads are constructed affects loggers' operating season. High-standard roads allow log hauling and equipment movement during wet weather, extending the operating season for loggers and related forest industries alike.

However, high-standard roads cost more to construct but usually less to maintain. Consequently, the general public, loggers, and the Forest Service want the least expensive road (including construction, maintenance, and operation) that will meet the purpose for which it was constructed while at the same time protecting the existing environment and providing other resource benefits in an integrated resource management manner.

Three different standards of permanent local system roads are utilized on the Ottawa National Forest. They are:

- Summer-normal
- Winter/summer-dry, and
- Winter-only.

In addition to these three standards of local roads, temporary roads are used to provide for short-term access into areas that do not warrant a permanent system road. (Refer to Forest Plan, Forestwide standards and guidelines-7700 Transportation System for local and temporary road standards and typical cross sections).

Part of the problem is one of efficiently matching season of access and the amounts of forest resources which different road standards can make available, considering the costs of construction and the impact that a road or its operation and use can have on desired recreational settings.

What constitutes the best road for the purpose is a source of disagreement. Some loggers and off-road-vehicle users view the roads now constructed for timber operations as excessively high standard and a waste of public money. Other loggers feel the same roads are too low a standard for modern equipment.

Part of the response to the transportation problem must strive to reach a balance between competing uses dependent or influenced by the road system itself.

The presence of existing roads is generally not a controversy, nor is reconstruction of existing old roads on the Forest. However, the need for construction of additional roads is. Some citizens feel additional access to the Forest is needed; others feel existing roads should suffice. Some local residents and Forest visitors value the remote character of the landscape, which could be threatened by intensive road construction.

Historically, most of the roads on the Ottawa National Forest were in place long before the establishment of the Forest. They were placed most conveniently for logging, without always fully considering how the roads would be used later. The subsequent usefulness of some roads has suffered as a result. Many citizens and the Forest Service want a more coordinated approach to transportation planning and road construction to ensure more long-term usefulness.

More local roads exist than are needed in some parts of the Forest. Other areas lack local road access.

The roads of the Ottawa National Forest serve hunters, snowmobilers, and other recreationists after logging operations are done. Consequently, closure of roads after their construction incurs some resistance from some parties.

The presence of roads has a significant effect on the wildlife and recreation opportunities available in the Forest. Additional roads can degrade wildlife habitat for those species requiring remoteness, hunting and other backcountry recreation experiences but can enhance four-wheel-driving, use of all-terrain vehicles (ATVs), and some types of hunting such as bear hunting.

Other public concerns about the Forest's transportation system included maintenance of roads once they are constructed and development of a snowmobile trail system.

#### Opportunities

The roads of the Ottawa National Forest serve a variety of resource needs. Some combination of existing and new local roads along with road closures such as gating is needed to provide an appropriate mix of public benefits from the Forest.

The Forest planning process provides the opportunity to determine the road system that will best serve future needs. The selection of the amount of roads needed and the standard of roads that will make up that system was based on the issues, concerns, and opportunities, the need for a yearround supply of timber products, wildlife habitat needs, access for resource protection, and the need for a variety of recreation opportunities.

The density of roads and the mix of road standards that compose the transportation system on the Forest will vary from one management area to another. The Forest has the opportunity to manage some areas with reduced road densities and standards to provide for semiprimitive motorized or nonmotorized Recreation Opportunity Spectrum (ROS) settings. Other areas could be managed with higher densities and standards of road to allow for more efficient transportation of timber products, while providing a roaded natural ROS setting.

Some areas of the Forest have a high density of roads while others have a relatively low density. Areas with high density permit easier access to locations within them and the resource uses they have. High density areas are generally more efficient for timber harvesting operations and can accommodate many recreation users over a period of time. These areas in general lend themselves to a roaded natural recreation setting. They can, if intensively managed produce a high yield of timber fairly efficiently. And, as a result of harvesting operations, these areas can achieve vegetation conditions favorable to wildlife game species, as well as many other nongame species.

Many of these areas have attained this condition due to relatively inexpensive road construction costs and productive timber lands. Adding local roads to these areas is frequently inexpensive, the expense varying with the standard of road. Many recreational uses from driving for pleasure to camping are available throughout high density areas. The standard of road and the management of roads can also affect recreation opportunities. Higher standard roads added to these areas increase the season of access for timber harvest and hauling and, if left open, can increase recreation opportunities. Closing them, through gates and signs or natural materials may maintain road condition and expand walk-in type recreation opportunities, including use by hunters.

Areas of the Forest with a low density of road have limited access and resource use opportunities. They generally can accommodate a more limited number of uses over time. Timber harvest operations in these areas rely on more temporary roads to reach into the locations off the local road or greater skidding distances from stump to truck. These areas are frequently more expensive to operate in but less frequent entry and higher product yields per acre are techniques that can improve upon this. Due to fewer roads, all vehicle access is more limited, including recreation uses and hunting. These areas lend themselves to semiprimitive motorized or semiprimitive nonmotorized settings. If maintained, these areas can provide back country recreation activities not available in roaded natural areas. Adding roads to these areas is frequently expensive due to landform and soil conditions. However new roads can be built to increase access while maintaining the semiprimitive character by emphasizing a lower density and standard. When built, roads can be closed, retaining the desired visual and recreation setting.

Responding to the problems facing the Forest will require balancing high density road areas and their relatively high potential yield of many resource uses with lower density areas which can produce resource products at a slower rate but also supply recreation and wildlife uses not available in high density areas.

Coordination of the long-range resource management needs through the Forest Plan will reduce the cost and amount of road construction and maintenance and increase the efficiency of the roads that are built.

---

Problem 2 -  
Wildlife

The wildlife management problem involves deciding what composition, arrangement, age class distribution and structure of vegetation would be appropriate to provide habitat conditions to maintain viable populations of all existing native and desired non-native vertebrate species. Habitat for threatened and endangered wildlife species, including areas with low amounts of road, needs to be provided. Providing improved habitat conditions for white-tailed deer and ruffed grouse is of particular local interest.

The wide variety of timber types on the Ottawa National Forest creates diverse wildlife habitat. The present mix of wildlife species exists because of the vegetative history of the Forest but wildlife populations are changing as the forest ages.

Logging of the pine and hemlock began in the early 1880s. Logging was followed by uncontrolled fires, creating ideal habitat for species such as deer, grouse, and snowshoe hare. Later logging of the hardwoods created new habitat for deer and grouse. These species thrive on temporary openings, young growth, and aspen stands. Since the 1950s, the forest has

matured. Aspen is being replaced by hardwoods, which provides less productive habitat for deer and other game. Instead, other forest-dwelling wildlife dependent on more mature timber, such as fisher, tree warblers, pileated woodpeckers, and squirrel, are now on the increase.

Local residents do not want further declines in deer and grouse populations because of the local importance of hunting for recreation and, in some cases, for food. Therefore, Forest Service timber activities are frequently judged on the basis of what they do for those species.

The need to change or maintain certain vegetation types for wildlife purposes is understood by local sportsmen. Forest Service managers seek to provide a mixed spatial arrangement of vegetation types and ages. This diversity is viewed as critical both to meeting timber demands and to providing habitat for game, nongame, and threatened and endangered wildlife species.

Wildlife are an integral part of the local lifestyle. Many area residents return to a traditional hunting area year after year. Interest in an area becomes almost proprietary, especially when the hunting grounds are near a privately owned camp. Therefore, additional roading or access restrictions are of localized but intense interest.

The Forest's abundant lakes and streams make fishing an important tourist attraction and a local lifestyle amenity. Anglers want trout stream habitat improved and the lake habitat and species managed.

Both local residents and Forest Service personnel desire coordination with the Michigan Department of Natural Resources, the agency responsible for wildlife and fish populations.

#### Opportunities

The Ottawa National Forest has and will continue to have the capability to support wildlife populations. The wildlife species present will depend on the type of forest created by vegetative management practices carried out on-the-ground. The mix of vegetation conditions provided will influence the type and number of wildlife species and, in turn, the capacity for wildlife-based recreation such as hunting and photography.

The Forest planning process provides the opportunity to address the two major aspects of the wildlife management problem.

First, the question of deer and grouse population declines can be addressed through aspen and thermal cover management, creation of temporary forest openings, and the integration of timber and wildlife management practices. The location, timing, and design of vegetation management projects has a significant influence on wildlife populations and recreation opportunities associated with wildlife.

Second, the Forest Plan can deal with the issue of coordinating wildlife and fisheries management practices with the Michigan Department of Natural Resources, others, and the Forest Service.

A minimum level of vegetative diversity is essential to retain existing wildlife species. However, the opportunity exists to create a more diverse forest than currently exists by maintaining a mix of vegetative community types including different vegetative types and a range of age classes from young growth to older mature trees.

---

Problem 3 -  
Landownership

Forty percent of the land within the boundaries of the Ottawa National Forest is privately, forest industry-, state- or county-owned. Public and private lands are intermingled, creating administrative problems for all landowners. Corporate lands for the most part are large contiguous areas.

From the Forest Service perspective, small parcels of land are difficult to locate, hard to reach, and inefficient places to spend time or money. Owners of small parcels within National Forest ownership are often concerned about continued access to their property and public use of nearby lands.

Some communities feel that National Forest landownership limits their expansion opportunities. Developers are also interested in the availability of some Forest Service land for private use.

The present options for resolving mixed ownership problems are land exchange between the affected owners, partial acquisition (e.g., easements), and outright purchase of the property in question. Opinions concerning further acquisition of land by the Forest Service vary. Some favor such action while others oppose it strongly. Opposition is, in large part, based on a belief that public land erodes local tax bases and affects local economies by limiting the amount of land available for private development.

Opportunities

The Ottawa National Forest will continue to be a major landholder in the western Upper Peninsula of Michigan. Existing avenues for landownership adjustment and the need to make such adjustments are expected to continue.

Through the Forest Plan, the Ottawa National Forest can set a policy for landownership adjustment that will address both private community development opportunities and resource management efficiency.

Land exchange will be the primary method of improving cost effectiveness. As a result, the overall number of acres in National Forest ownership would not change dramatically.

Problem 4 -  
Vegetation

The vegetative management problem involves deciding what vegetative composition should be maintained and what silvicultural systems will be utilized. These decisions influence several issues relating to the vegetation management including wildlife habitat, clearcutting, chemical use, the type of wood products available, the overall amount of timber available, the overall amount of timber available over time, and the economic efficiency of managing the vegetation to provide a variety of products and uses.

Northern hardwoods are the dominant forest cover of the Ottawa National Forest. Much of it is between 50 and 70 years old and interspersed with aspen and balsam fir that are dying of old age or from insects or diseases.

The current condition of the Forest makes long-term changes inevitable. As the Forest ages, the volume and type of material available also changes. The variety of vegetation types and soil/site conditions within the Forest offers great flexibility in the way this change can be managed. As a result, a wide range of responses to public demands and issues are possible.

The local logging and wood manufacturing industry depends on the Forest for a steady supply of marketable wood products. Current demand is for aspen and hardwood pulp and sawtimber. Local residents also use the Forest as one of several sources of firewood.

The general public and the Forest Service want to maintain a diversity of forest types for aesthetic, recreation, wildlife, and insect and disease control reasons. Diversity of the Forest also retains future options for changing the type of wood produced to match market demands and provides a variety of habitat for maintaining viable populations of wildlife. Some citizens are worried that converting northern hardwood or aspen stands to red pine will reduce wildlife populations.

Citizens are concerned not just about what type of vegetation is present but how it will be treated. Such concerns include the silvicultural system used to manage hardwoods, clearcutting, timber sale size and design, and chemical use. Administrative procedures of the timber sale program are also a concern.

Opportunities

The choices made in resolving the vegetation management problem will determine the type and availability of wood products, the vegetative diversity of the Forest, the wildlife species habitat, the road system needed, the visual appearance of the Forest, and a major cost of managing the Forest.

The Ottawa National Forest's capability to produce timber products exceeds total projected local demand for the next 50 years. However, the supplies of some specific types of timber products may not meet demand unless steps are taken now to manage certain tree species, and schedule timely harvest practices in various vegetative types.

The Forest planning process provides the opportunity to address many of the vegetation-related issues by determining the desired vegetation composition and schedule of management practices by management area. These issues include providing a variety of wildlife habitat, clearcutting, red pine planting, chemical use, the mix of timber products available, the overall amount of timber available, and the economic efficiency of producing that timber.

The Forest Plan will not address the firewood concern because the Forest's supply will not limit local firewood availability in the near future. Such concerns were best treated operationally.

The timber sale concerns regarding sale size, design, and administrative procedures are not totally within the scope of the Forest Plan. However, parts of these concerns can be addressed in the Forest Plan standards and guidelines.

Problem 5 -  
Wilderness

The wilderness problem involves deciding which existing roadless areas on the Forest should be designated for wilderness, wilderness study, or nonwilderness.

The Ottawa National Forest currently contains no components of the National Wilderness Preservation System. However, the second Roadless Area Review and Evaluation (RARE II) identified areas of the Forest as roadless areas that should be evaluated for their wilderness potential. These areas were Sylvania, Sturgeon Gorge, and Norwich Plains (formerly Cascade Falls).

As a result of RARE II, Sylvania and Sturgeon Gorge were recommended to Congress for inclusion in the National Wilderness Preservation System and Norwich Plains was recommended for nonwilderness uses.

These areas were further evaluated as part of the Forest planning process, because of the Ninth Circuit Court of Appeals decision in California vs. Block. This decision questioned the sufficiency of the RARE II process. Following completion of the public involvement phase of the further evaluation process, the Cyrus H. McCormick Experimental Forest was added to the list of roadless areas to be evaluated.

Congress specifically requested a study and recommendation on Sturgeon Gorge in 1975 under the authority of the Eastern Wilderness Act. Therefore, the options for Sturgeon Gorge include a recommendation for wilderness designation.

Many local residents view wilderness as a lockup of land that infringes on their traditional use of these areas. Other regional interests see wilderness designation as a needed protection for unique characteristics. Reactions to the wilderness question tend to vary sharply between regional and local interests.

The range of multiple uses from timber to recreation and wildlife has been proposed as potential uses if nonwilderness management is selected as the preferred management for any of these areas.

The type of access allowed and the presence and standard of existing roads within these areas are other public concerns. Some private landowners adjacent and within some of the areas are worried about the effect of wilderness designation on their property.

#### Opportunities

Through the Forest Plan, the status of the existing roadless areas can be clarified. The 58,028 acres involved can either be released for nonwilderness use, protected for further wilderness study, or, as in the case of Sturgeon Gorge, recommended for wilderness designation.

Refer to the Final EIS Appendix Volume, Appendix C - Roadless Area Evaluation, for complete discussion of the further evaluation process.

### **Management Concerns Deferred or Resolved**

#### Problem 3 - Landownership

The landownership problem was analyzed and policies have been developed in response to the public's concern about government lands within the Forest. These policies are listed in Chapter IV of the Forest Plan, Forestwide standards and guidelines-5400 Landownership and under specific management area standards and guidelines for management areas 5.1, 6.1, 7.1, 9.2, and 9.3.

The Forest land adjustment program will be further analyzed and documented as necessary to meet NEPA requirements, using the integrated resource management process during Forest Plan implementation.

As a result of the policies developed to respond to this problem and since they do not vary by alternatives, no further reference or discussions will be presented in the Final EIS.

#### Wild/Scenic Inventory Rivers

Fifteen rivers within the Ottawa National Forest are listed as study rivers for consideration to be recommended for federal designation as wild, scenic, or recreation rivers. The inventory, conducted by the Heritage Conservation and Recreation Service of the U.S. Department of Interior, included the Black, Presque Isle, Ontonagon, Sturgeon, Paint, Yellow Dog, and Brule river systems or portions thereof.

As part of the current forest planning process, the Forest conducted a preliminary analysis of these rivers. Refer to Final EIS Appendix Volume, Appendix D-Wild and Scenic Rivers Evaluation for more information on the analysis.

As a result of the preliminary analysis, all rivers will be managed under management area prescription 9.2 except for that portion of the Yellow Dog River within the Cyrus H. McCormick

Experimental Forest Roadless Area and that portion of the Sturgeon River in the Sturgeon Gorge Roadless Area.

The Yellow Dog River will be managed under management area prescription 9.1 and the Sturgeon River under management area prescription 5.1.

These management requirements do not vary by alternative. Therefore, no further reference or discussion concerning the protection of wild/scenic inventory rivers on the Ottawa National Forest will be presented in the Final EIS.

---

Bergland Ski Hill

Bergland Hill is located approximately 7 miles north of Bergland, Michigan on Michigan Highway 64 on the Bergland Ranger District and was identified as a special management area because of its potential to be developed as a winter sports site as documented in the Bergland Hill Ski Complex Final Environmental Impact Statement, dated February 1973.

During the current land management planning process, the Final EIS was reviewed and was determined to be still applicable by the Forest Supervisor, Ottawa National Forest. The area is still recognized as one of the best potential downhill ski areas in the upper Midwest. Interest in developing the area into a winter sports complex continues to be pursued by private and other governmental interests.

As a result of this review, the Bergland Hill area will be managed to retain its potential for development as a winter sports area under management area prescription 9.3 until a decision is reached by a permittee and the USDA-Forest Service on which of the total 680 acres will be developed.

These management requirements do not vary by alternative. Therefore, no further reference or discussion concerning the management of the Bergland Hill area will be presented in the Final EIS.

---

Black River Recreation Area

This area is located north of the town of Bessemer along the Black River on the Bessemer Ranger District.

It was identified as a special area because of its unique recreation-oriented resources, existing use patterns, and its relationship with many other privately owned and operated recreation facilities within and adjacent to the area. The Black River Recreation Area includes the harbor area on Lake Superior, the Black River listed as a wild/scenic inventory river (refer to Draft EIS Appendix Volume, Appendix D-Wild and Scenic Inventory Rivers Evaluation for more information about the Black River corridor), three developed recreation observation sites, the North Country National Scenic (hiking) Trail, and Copper Peak Ski Flying Hill, a privately operated ski jumping facility.

This 860-acre (net) area will be managed recognizing the recreation resource values of the area.

As a result, the Black River Recreation Area will be managed under the management area 7.1 standards and guidelines listed in Chapter IV of the Forest Plan.

Since this management direction does not vary by alternative, no further reference or discussion of this area will be presented in the Final EIS.

---

Sylvania  
Recreation  
Area-  
Perimeter  
Area

---

Located west of the town of Watersmeet on the Watersmeet Ranger District, this area has been managed as a special recreation management area since its purchase by the Forest Service in 1966 and under the management direction of the Sylvania Recreation Area Management Plan approved by the Regional Forester in December 1968. Also within the area is a segment of the Middle Branch of the Ontonagon River, a wild/scenic inventory river (Refer to Final EIS Appendix Volume, Appendix D - Wild/Scenic Inventory Rivers Evaluation for more information about the Middle Branch Ontonagon River corridor.)

The area also includes a picnic and swimming area on Clark Lake, three boat landings, an auto-access campground, and an information station at the entrance to Sylvania.

Management of this 2,389-acre area is directly influenced by the management of the interior area of Sylvania and vice versa. As a result, this area will be managed recognizing the special resource values of the area-specific management area 8.2 standards and guidelines listed in Chapter IV of the Forest Plan.

Since this management direction does not vary by alternative, no further reference or discussion of this area will be presented in the Final EIS.

---

Forest Service  
Timber  
Contracts and  
Firewood  
Availability

---

Public concerns were expressed regarding the size and design of timber sales, the administrative procedures of timber sale contracts, and the availability of firewood.

Since most of these concerns were not within the scope of the Forest planning process and do not vary by alternative, they were resolved operationally.

Policies regarding timber sale contracts and firewood availability are listed in Chapter IV of the proposed Forest Plan under Forestwide and Forestwide vegetative management standards and guidelines.

As a result of the policies referenced above and since they do not vary by alternative, no further discussion will be presented in the Final EIS.

Lower Dam  
Impoundment

Lower Dam impoundment is located about 7 miles southwest of Sidnaw, Michigan on the Kenton Ranger District.

During the public involvement process, public concern was expressed about the management of Lower Dam impoundment by the Forest Service. The concern involved the removal of the water in the impoundment and the desire to see it refilled and managed for trout and other fishery.

As a result of the public concern expressed, the Forest Service acquired the dam through a land exchange with the State. Subsequently, the Forest Service and the Michigan Department of Natural Resources agreed to refill the impoundment and restock it with fish. This project was completed prior to the publication of the Forest Plan. Therefore, no further reference or discussions about this concern will be presented in the Final EIS.

Public  
Involvement and  
Information  
Services

Public concern was expressed about the need to improve the Forest public involvement and information service program.

Since these concerns were not within the scope of the Forest planning process, and would not vary by alternative, they were resolved operationally.

Policies regarding public involvement and information services are listed in Chapter IV of the Forest Plan under 1600 Information Services, 1800 Human and Community Development, 1900 Land and Resource Management Planning (NEPA), 2100 Environmental Management, 2300 Recreation Management, 2600 Wildlife Management, 2700 Special Use Management, 2800 Minerals and Geology, 5100 Fire Management, 5300 Law Enforcement, 5400 Landownership, and 7700 Transportation System Forestwide standards and guidelines.

As a result of the policies referenced above and since they do not vary by alternative, no further discussion will be presented in the Final EIS.

## **Major Areas of Comment and Change**

Wilderness

Many respondents commented on the need for wilderness on the Ottawa National Forest. Some were against wilderness designation and/or wilderness study for several reasons.

Other respondents supported wilderness as proposed in the proposed Plan, for a particular area, or in some form without specifying a particular area. Some respondents also wanted more wilderness than in the proposed Plan.

The final Forest Plan recommendations for wilderness designation and wilderness study were not changed from the proposed plan. Wilderness designation is recommended for Sturgeon Gorge and

wilderness study is recommended for the Cyrus H. McCormick Experimental Forest and the Sylvania Recreation Area, totaling about 50,026 acres or approximately 5.7 percent of the federal land within the Forest.

---

Management of  
Northern  
Hardwoods

Many respondents expressed concern about northern hardwood management. The preponderance of comment received favored uneven-aged management of northern hardwoods, which was at odds with the even-aged management emphasis of the proposed Plan. Some favored even-aged management and others favored a balance of both systems.

The Final Forest Plan now emphasizes uneven-aged management of the northern hardwood type. Sixty percent of the northern hardwood type will be managed uneven-aged, up from 43 percent in the proposed Forest Plan. Conversely, even-aged management is reduced from 57 percent to 40 percent of the northern hardwood type. Although uneven-aged management is emphasized, even-aged management will be utilized to increase browse within winter deer range and to maintain mid-tolerant hardwood tree species on the most suitable sites.

---

Timber Harvest  
Level and Mix  
of Timber  
Products

A large number of respondents expressed concern about the level of timber harvest (allowable sale quantity) and/or mix of timber products in the proposed Forest Plan. A wide spectrum of opinion about the level of timber harvest emerged from the comments, ranging from those advocating the complete elimination of timber harvest to a request for a 40 percent increase in timber production over the level in the proposed Forest Plan.

Several respondents also commented on the proposed harvest levels of individual products. These comments generally requested an increase in several timber products, with particular concern for needed increases in hardwood sawtimber and aspen products.

The Final Forest Plan reduces the allowable sale quantity, from the 16.0 MMCF per year in the proposed Forest Plan, to 13.1 MMCF per year. This reduction was made in response to comments received and a re-evaluation of demand.

The level of hardwood sawtimber production will remain consistent with sound silvicultural practices with emphasis on providing high quality northern hardwood sawtimber and veneer for future generations. The level of hardwood sawtimber production will remain at 1.8 million cubic feet (MMCF) per year (9.7 million board feet (MMBF)) as in the proposed Forest Plan. The remaining mix of timber products were changed in the Final Forest Plan to be more responsive to demand for these individual products. Hardwood pulpwood was reduced from 5.3 MMCF per year to 4.1 MMCF per year (47 thousand cords). Softwood products were reduced from 4.7 MMCF per year to about 2.9 MMCF per year (35 thousand cords).

Management of  
the Aspen Type

Many respondents expressed an interest in management of the aspen type. The preponderance of comments about aspen management supported the level of aspen management in the proposed Forest Plan or thought aspen management should have increased emphasis. Many said the aspen type was important habitat for deer, grouse, and many other species of wildlife or was needed to meet future demand for aspen timber product.

Some respondents favored a reduced emphasis on aspen because of the clearcutting associated with maintaining the aspen type.

The Final Forest Plan increases the acreage of aspen type maintained to 138,000 acres, up from the 126,000 acres in the proposed Forest Plan.

Pine Planting  
and Release

A large number of respondents commented on the proposed reductions in pine planting and increased emphasis on natural reforestation. The majority of comments on this subject were opposed to the proposed decrease in pine planting, while several supported the proposed reductions.

In the Final Forest Plan, the acreage of pine planting was increased from the 330 acres per year in the proposed Forest Plan to 530 acres per year. However, the Final Forest Plan will still emphasize natural reforestation and represent a reduction from the current level which has been about 1,000 acres per year.

The acreage of release was also increased in the Final Forest Plan from 250 acres per year to 900 acres per year. This was in response to comments, the increase in pine planting, and a re-evaluation of current needs. This too is a reduction from the current level of about 1,300 acres per year.

Road Construction

Many respondents said fewer roads should be constructed than proposed in the proposed Forest Plan. Some called for a ten-year moratorium on all new road construction. Some favored more road construction than is currently being constructed and others were in agreement with the reduced level of road construction proposed in the proposed Forest Plan.

In the Final Forest Plan, there will be a reduction in the amount of new forest road construction. The proposed Forest Plan suggested a reduction in road construction (34 miles per year) from current levels (41 miles per year). In response to public comment, the level of road construction in the Final Forest Plan will be further reduced to about 30 miles per year from the 34 miles per year in the proposed Forest Plan. This reduction is possible in part to an increased emphasis on maximum use of existing roads. In addition, unneeded roads are to be identified and obliterated to prevent use by passenger vehicles.

---

Road Closures

---

Comments on road closure ranged from those who favored leaving all roads open year-round to those who felt road closure was necessary for specific reasons and for closure during certain times of the year.

The Final Forest Plan increases emphasis on road closures to provide habitat conditions for wildlife species that require more remote habitat conditions and to provide nonmotorized recreation opportunities in all management areas. Particular emphasis is placed on the 164,000 acres that will be managed primarily for semiprimitive nonmotorized recreation opportunities, and the 256,000 acres being managed to provide habitat for wildlife species such as the black bear and gray wolf.

---

Semiprimitive  
Recreation  
Opportunities

---

Many respondents specifically requested that the Forest Plan provide more areas devoted to semiprimitive nonmotorized recreation. Many other respondents were opposed to restrictions on vehicle use and stated that all National Forest lands should be open to motorized travel. Numerous respondents also favored some form of control on all-terrain vehicles, four-wheel drive vehicles, and snowmobiles without specifically referring to the terms "semiprimitive motorized" or "semiprimitive nonmotorized".

The Final Forest Plan provides a moderate increase in semiprimitive nonmotorized acreage from 133,000 acres, in the proposed Forest Plan, to 164,000 acres. The acreage of semiprimitive motorized management areas was increased from 46,000 acres to 51,000 acres. This results in a total increase of 36,000 acres of semiprimitive recreation opportunities from the proposed Forest Plan.

---

Remote  
Habitat

---

Several respondents said that the Forest Service should provide greater biological diversity and that this should be accomplished by more acres in larger undisturbed blocks of land for remote habitat for those species, such as the marten, gray wolf, black bear, and lynx, whose existence depends on remoteness.

The Final Forest Plan was changed to respond to these concerns in several ways. The volume of timber harvest, road construction, and the acreage managed for timber production are all reduced from the proposed Plan. The acreage of semiprimitive motorized and nonmotorized was increased by about 36,000 acres from the proposed Plan.

Also emphasis on road closures Forestwide has been increased, with particular emphasis to provide habitat for wildlife species requiring remoteness and to provide nonmotorized recreation opportunities.

Endangered and threatened species habitat requirements were re-evaluated (see Final EIS Appendix Volume, Appendix H). The Final Forest Plan was changed to provide suitable habitat including a 256,000-acre contiguous area for the gray wolf and other species requiring remote habitat. Management direction for this area provides for maintaining an adequate prey base and control of public use of roads to create an average density of roads open to passenger vehicle use of one mile per square mile or less.

Future habitat conditions in this area will emphasize solitude along with vegetative management as recommended by the Fish and Wildlife Service's formal consultation on the proposed Plan.

Management Several respondents requested changes or additions to the  
Indicator Species Forest's list of management indicator species.

The wildlife and fish management indicator species were re-evaluated (see Final EIS Appendix Volume, Appendix I). The following changes were made to the management indicator species list in the Final Forest Plan. The pumpkinseed sunfish was replaced by the smallmouth bass and northern pike. In addition, the loon, barred owl, and American bittern were added as management indicator species.

## Conclusion

The management problems are the key contribution of Chapter I to the Final EIS because they are the threads that tie the subsequent chapters together.

In Chapter II: Alternatives, the problems guide the discussion in two ways: (1) they shape the goals of each alternative formulated and (2) they provide ways to compare the benefits provided by each alternative, including the preferred alternative.

In Chapter III: Affected Environment, the present environmental conditions that will be changed in response to the problems are described.

In Chapter IV: Environmental Consequences, significant changes in the environmental conditions are identified. These changes will be caused by each alternative's response to the problems.