# Chapter 2
# The Alternatives

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## Introduction

This Environmental Impact Statement explores the differences among a number of management alternatives for the Chequamegon-Nicolet National Forests. These alternatives were developed to provide a range of options for the direction that forest management will take for the next 10 to 15 years. Each alternative is a potential forest plan that could be implemented, if selected.

Included in this chapter is a discussion of the following:

- How alternatives were developed;
- Overview of changes to alternatives between draft and final;
- The features of each alternative, including the no-action alternative;
- How management areas compare among alternatives;
- Alternatives that were considered but eliminated from detailed study;
- How the alternatives, including the Selected Alternative, compare to one another; and
- Budget levels assumed for the Selected Alternative.

### Development of Alternatives

The Chequamegon-Nicolet National Forests' plan revision process began in 1994 with the determination that there was a need to change the Forest Plans that had guided forest management activities on the Forests since they were approved in 1986 (Need for Change report, 1996). Indicators for the need to change were: public comments during implementation of the 1986 Plans, changed conditions as reflected in monitoring and evaluation during Plan implementation, the availability of new information and scientific understanding, and changes in public perceptions about what constitutes maximum public benefit related to national forests. This determination was followed by the 1996 publication of the Notice of Intent to Prepare an Environmental Impact Statement, which explained the Forest Service's intent to revise the 1986 Forest Plans, summarized the requirements to revise, and provided details about revision items to be addressed.

Seventeen resource assessments were conducted to establish the context for change in the Forest Plans. An Analysis of the Management Situation (AMS) was accomplished for 10 problem areas or issues identified from the assessments. The AMS for each problem area thoroughly described the reasons for changing the 1986 Forest Plans as well as the potential range of responses for each problem area that could be developed into alternatives for the revised Plan.

The core of the revision process is formulation of a revised land and resource management plan, or forest plan, and a set of forest management alternatives for implementing the plan. The alternatives, outside of the No Action Alternative that maintains current management direction, do not vary in proposed forestwide direction. They do, however, vary in acreage allocated to the different management areas, each of which has its related set of desired future conditions and management direction. The

alternatives provide different scenarios for applying management area direction across the land area of the Chequamegon-Nicolet National Forests within the framework of the revised forest plan. Policies regarding ATV use and road-related density goals vary among the alternatives even though they are not necessarily part of management area direction.

The 2004 Forest Plan provides goals, objectives, and standards and guidelines that provide forestwide management direction for the Chequamegon-Nicolet National Forests and their resources. Forest goals are broad statements that describe overall conditions managers will strive to achieve. They are not directly measurable and there are no time frames for achieving them. Goals describe the ends to be achieved, rather than the means to these ends; they serve as vision statements. In contrast, Forest objectives provide the means for goal achievements in the form of measurable steps to be taken over time. Objectives generally are achieved by implementing projects or activities. However, objectives are not targets, which are a measure of annual outputs dependent upon budgets.

A Standard is defined as a course of action that must be followed, or a level of attainment that must be reached, to achieve forest goals. Adherence to standards is mandatory. In general, they limit project-related activities, rather than compel or require them. Proposed deviations in management activities from standards must be analyzed and documented in a forest plan amendment. A guideline is also a course of action that must be followed. However, guidelines relate to activities where site-specific factors may require some flexibility. Proposed deviations in proposed management activities from a guideline must be analyzed and documented in a way that meets requirements of the National Environmental Policy Act.

A forest plan establishes additional direction for individual management areas, as needed. Management area direction contains a set of statements describing desired condition including landscape patterns, site level characteristics, desired vegetative composition, and disturbance regime. In addition, management activities and additional standards and guidelines are included, as needed, to manage or protect specific resources**.**

Alternatives have been developed using an interdisciplinary process as required by National Environmental Policy Act (NEPA) regulations. Public comments received during the scoping phase were combined with the revision topics described in the Notice of Intent to revise the 1986 Forest Plan. Seven alternatives, in addition to Alternative 1, the No Action alternative, were then developed using the following process. Task groups identified alternative ways to respond to each planning topic that addressed the problems, met goals, responded to public comments, and explored a broad range of opportunity costs and tradeoffs. The various task groups convened and developed the seven alternatives by combining their different methods of addressing the various plan topics. For example, in one alternative, more opportunity for ATV trail construction was matched with allocation of fewer management areas stressing ecosystem restoration. Another alternative might include higher ATV trail construction matched with high ecosystem restoration. Therefore, each of the alternatives emphasizes different topics, but they are not necessarily organized by overall “theme.”

Action Alternatives (Alternatives other than Alternative 1), considered in detail in the Environmental Impact Statement, meet Forest goals, address revision topics, and respond to public comments. Each alternative could stand alone as a potential forest plan. Alternatives share goals, concepts, and policies that all national forests are directed to follow. They differ in emphasis given to particular issues and concerns. An alternative

developed early in the process (Alternative 8) was subsequently dropped since it did not display enough variation from other alternatives (see 'Alternatives Considered but Eliminated from Detailed Study' later in this chapter). Alternative 1 meets the NEPA requirement (36 CFR 219.12(f)(7) that a no action alternative be considered. "No Action" means that management allocations, activities and management direction found in the existing forest plans, as amended, would continue.

For each alternative, specific land areas of the Forests are allocated to the management areas that are defined in the accompanying Forest Plan. Characteristics of management areas are described in detail in Chapter 3 of the 2004 Forest Plan. Management area allocations are also shown on maps of each alternative in the accompanying map packet. These maps show varying amounts and types of management areas assigned to land areas on the Forests, based on the alternative's emphasis on various issues and ecological characteristics. A listing of acreages allocated to each management area is provided in Supplemental Tables 2-18 and 2-19 at the end of this chapter.

Alternative 5 was designated as the Preferred Alternative to serve as the Proposed Plan in draft documents. In response to comments received on the Proposed Plan and Draft Environmental Impact Statement, an additional alternative was developed by modifying the Preferred Alternative. This new alternative is called the Selected Alternative in this document. Examples of changes between the Preferred Alternative and the Selected Alternative include increased emphasis on ecosystem management and landscape pattern, and adjustments in ATV trail miles, season of use, and terminology.

Alternatives 1-9 plus the Selected Alternative adhere to the concepts of multiple use and sustained ecosystem management. With the exception of the "No Action" alternative, alternatives also share a common set of Forestwide Standards and Guidelines (See accompanying 2004 Forest Plan) that ensure protection of forest resources and comply with applicable laws. Updated data and analytical procedures, as well as evolving scientific knowledge, have been incorporated into all revised alternatives. Details of the alternatives are presented in this chapter.

## Major Changes in the Alternatives between the DEIS and the FEIS

Public comment, shifts in agency direction, and correction of errors all contributed to changes made between the draft and final environmental impact statement (FEIS). These changes are summarized below:

### Public Input

Nearly 3,000 individual public responses (letters, e-mails, faxes, public hearing testimony, etc.) were received on the DEIS and Proposed Forest Plan. Many offered recommendations or requests for changes or improvements in the environmental analysis; some suggested modification in alternatives or new alternatives; others suggested modifications to the goals, objectives, standards, or guidelines.

Public input received on the DEIS and Proposed Forest Plan also identified the need for several improvements to the analysis and presentation of materials in the FEIS and Forest Plan. As a result, editorial discrepancies, minor inconsistencies, or gaps in the presentation of information in the DEIS have been corrected for the FEIS.

## Recreation/Access

Public comment requested a more detailed display of effects of alternatives on National Scenic Trails, motorized trails, and number and density of roads.

Effects of Management Area allocation and road density guidelines on the North Country and Ice Age National Scenic Trails were analyzed and added to Chapter 3 of the EIS. Both the trail locations were added to maps of the Selected Alternative.

A detailed table displaying potential relocation of motorized trails due to allocation of non-motorized areas is included as Appendix O of the FEIS.

Improved transportation GIS coverage was completed based on previous field inventory using Geographic Positioning System (GPS) technology. In addition, errors in data manipulation within the GIS system led to over-stating existing road corridor mileage in the DEIS. Therefore, figures related to road density and road mileage to be decommissioned or closed have changed for all alternatives compared to the DEIS.

Terminology for display of ATV trail information was changed in the Selected Alternative. The term connector was dropped, since comments from the public indicated it was confusing.

The Roadless Area Conservation Rule (RACR) was enjoined after the DEIS was published. Reference to areas mapped in the RACR Final Environmental Statement was removed from FEIS Appendix C and filed in the planning record.

## "SPECTRUM" Optimization and Scheduling Model

An error was discovered in the final outcomes produced by the model used to project future timber outputs and species composition. Constraints that reflect requirements of Standards and Guidelines for Best Management Practices along water bodies, for visual enhancement of corridors along High and Moderate Scenic Integrity areas, and for protection of selected trout streams were not incorporated into the model as originally intended. The model has been re-run to incorporate the needed corrections. This resulted in slight changes in total outputs for the two forests combined. There were also shifts in the relative balance of timber outputs between the two Forests, especially in the first decade.

## Social and Economic Effects

Assumptions and models used to predict economic effects of alternatives were reviewed, adjusted, and re-run for all alternatives. The related effects section was clarified and expanded.

## MA Acreages

Comparison between Management Areas of the 1986 Plans and revised Management Areas is sometimes difficult. The St. Peter's Dome area in Alternative 1, is now displayed as a Special Management Area (MA 8F) rather than Non-Motorized with vegetation management as it was in Management Area acreage tables in the DEIS. Past management better fits that MA description.

In some cases, inconsistencies between the tabular database (CDS) and the GIS database caused errors. As these were found they were corrected, causing slight acreage discrepancies between the DEIS and FEIS. In particular, Old Growth and Natural Feature Complexes (MA 8G) acreage is displayed as about 500 acres less than that shown in the

Draft documents. This is due to errors in database updating for complex P303 at the time MA 8G was developed and before the planning database was frozen.

### Additional Alternative

An additional alternative was added and analyzed in the FEIS. It is a modified version of the Preferred Alternative and is referenced as the Selected Alternative. Environmental Effects of this alternative are displayed in Chapter 3 of the FEIS.

## Elements Shared by Alternatives 2–9 and the Selected Alternative

Important points shared by alternatives other than the No Action Alternative (Alternative 1) are arranged by major revision topic and problem statement:

### Access and Recreation Opportunities

#### Problem # 1 All Terrain (ATV) and Off-Road Vehicle (ORV) Use/Motorized Access

In alternatives other than the No Action Alternative, ATV use is limited to designated roads and trails; no off-road or off-trail use is allowed. In addition, there is no provision for intensive use or play areas, causing one existing area to be closed and rehabilitated. The general policy is that roads and trails are closed to use by ATVs unless they are posted open. Finally, winter use of snowmobile trails by ATVs is permitted where posted.

ATV terminology varies between Alternatives 2-9 and the Selected Alternative. All alternatives vary in amount of trail and road use allowed by ATVs. Alternatives 2-9 refer to new loop trail miles, miles of connector between National Forest loop trails, and seasonal time period, if any, when ATVs might travel on designated road routes.

The term connector was not used in the Selected Alternative. Instead, mileage for connectors and trails are combined and referred to collectively as ATV trails. ATV routes are defined as classified roads that are designated for ATV use.

Challenge travelways available for Off-Highway, high clearance vehicles vary across alternatives. One currently exists in Alternative 1. Alternatives 2-9 and the Selected Alternative range from closing the existing route to adding additional trail mileage.

Changes have been made in snowmobile use policy to provide consistency between the two Forests. Future trail relocations due to management area allocations may be indicated in some alternatives. Forestwide Standards and Guidelines in Alternatives 2-9 and the Selected Alternative restrict snowmobiles to routes and trails that are posted open and designated for their use. In addition, snowmobiles may travel on normally unplowed, open roads when snow accumulations exceed four inches. In Alternative 1, snowmobiles were restricted to trails and specific roads on the Nicolet. On the Chequamegon, however, snowmobiles could travel off of trails, on Forest roads, and on designated trails. In general, snowmobile users remain on groomed trails or unplowed roads at present.

All alternatives retain the current Plans' forestwide goals of reducing total road densities to an overall Forest average of 3 miles per square mile of National Forest land. Management guidance on spatial allocation of open and total road densities is provided. Zones are identified and assigned upper limits for open and total road density. The areas were chosen based on the Recreation Opportunity Spectrum (ROS) classification system and on ecological factors. Management Areas 5, 5B, 6A, 6B, 8C, and 8D provide direction for road density. Other road density zones do not correlate with management area boundaries.

Figure 2-1 displays open and total road density upper limits used in spatial allocation of road density zones in the 2004 Forest Plan and Alternatives 2-9 and the Selected Alternative (action alternatives). Road density zones were applied based on maps developed to display the potential for ROS experience (in the planning record). The ROS classifications used on the Chequamegon-Nicolet, from least developed to most developed settings, are: Semi-Primitive Non-Motorized (SPNM), Semi-Primitive Motorized (SPM), Roaded Natural Remote (RNR), Roaded Natural (RN), and Rural (R). Non-Motorized with full vegetation management (NM) was developed in response to public comment. It is not part of the Recreation Opportunity Spectrum, but restricts public vehicular access in some areas within MA 1-4. Open road density is displayed on the left side of the figure; it includes only those roads that are open for public driving. Roads may exist within areas classified as Semi-Primitive Non-Motorized (such as MA 6B), but those roads would not be available for public driving access.

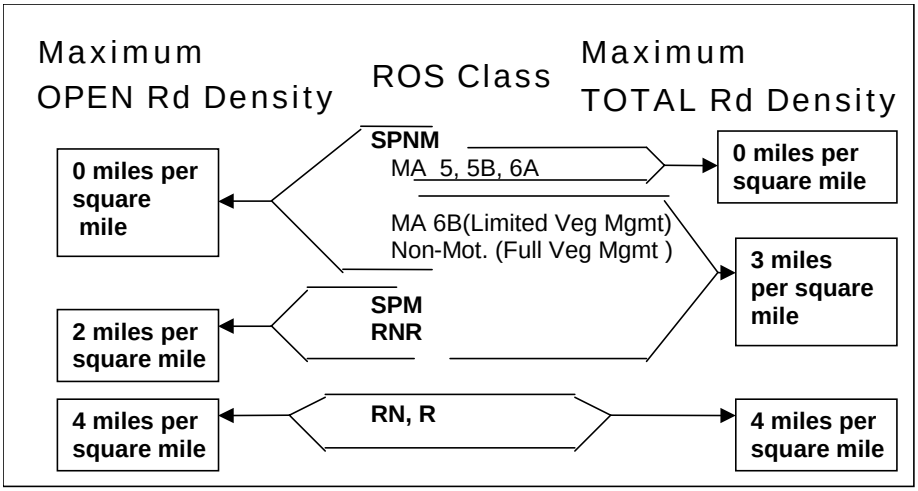


**Figure 2-1. Comparison of Recreation Opportunity Spectrum and Open and Total Road Density**

Upper limits for density of all roads (Total Road Density) are displayed on the right side of the figure. In some areas, such as Management Area 6B and Non-Motorized areas with full vegetative management, road corridors would remain in place for administrative or for Forest Service contractor use. Although not displayed in the diagram, additional 2 mile/square mile open road density limits are also included within some interior northern hardwood areas, potential SPNM areas if not allocated as MA 6A or 6B, the Moquah Barrens (part of MA 8C), and MA 8D (Existing and Potential Wild and Scenic River Corridors). See Alternative Maps for locations of open road density zones.

### Problem #9 Wilderness and Semi-Primitive Non-Motorized (SPNM) Areas

Eight areas have been identified that could potentially be recommended for Wilderness study. Alternatives 2 – 9 and the Selected Alternative range from 1 to 8 areas included in alternatives.

In the 2004 Forest Plan, the Semi-Primitive Non-Motorized (SPNM) designation has been subdivided into Management Areas 6A and 6B. Management Area 6A rates high in remoteness, water bodies larger than 5 acres, and a predominantly natural appearing environment. With few exceptions, timber harvesting is not allowed and natural events are the primary disturbance agents. The 6B Management Area provides a semi-primitive

non-motorized experience where timber harvesting is allowed, with restrictions. Restrictions focus on concentrating harvest activities spatially and temporally.

In addition, there is a third category (not SPNM) where full vegetation management is combined with non-motorized access. These areas are often referred to as either NM or XX.0, with the X's referring to the overlying management area prescription that guides vegetation management activities in these areas. Non-motorized with full vegetation management areas are not classified as Semi-Primitive Non-Motorized but provide a non-motorized experience within areas where vegetation is actively managed. Such areas were requested by some members of the public as areas to hunt in a non-motorized setting.

## Biological Diversity

### Problem #2, Aquatic, Riparian, and Wetland Ecosystems:

Protection of Aquatic Resources is accomplished through Goals and Objectives, Forestwide Standards and Guidelines, and an aquatic desired future condition.that are constant across Alternatives 2-9 and the Selected Alternative. Although 39 lakes that cover 14,741 acres within the National Forest boundary have been identified as impaired waters by the Wisconsin Department of Natural Resources, atmospheric deposition is considered the cause of impairment. Since traditional total maximum daily load allocations are not practical for impairments caused by atmospheric deposition, states and EPA are discussing a national strategy to reduce atmospheric deposition of mercury

### Problems #3 – 5 Ecosystem Restoration, Landscape Pattern, Old Growth

Both the Chequamegon and Nicolet 1986 Forest Plans were developed at a time when biological diversity was interpreted as providing the highest number of species types on a local or stand scale. In order to accomplish that, Forest Plans called for a mixture of openings and forested areas to create more edge habitat that supported a high number of species.

Since then, due to appeal, litigation, and the Scientific Roundtable on Biological Diversity report (Crow et al, 1994), a different interpretation of biological diversity has been developed where species diversity is considered on both a landscape and local scale. Areas providing interior forest conditions are needed on the landscape, as well as smaller patches of vegetation to provide for the persistence of native and desired non-native species.

Alternatives 2-9 and the Selected Alternative provide varying amounts of emphasis on ecosystem restoration within three vegetative communities. They include northern hardwood interior forest (MA 2B); Oak forest with a component of pine and pine forest with a component of oak (MA 3B & 4B respectively); and surrogate barrens (MA 4C). According to Government Land Office records of historic land surveys, pine barrens, pine forest, and northern hardwood interior forests were more dominant on the landscape than they are at present. Since the red pine/white pine communities take some time to develop, oak/pine forest is the transitional vegetative community where pine forest restoration emphasis would occur. Surrogate barrens are located near the Moquah Pine Barrens and the northwestern part of the Eagle River District; Management Area 4C prescriptions call for creation of large temporary openings via timber harvest. During the time that young seedlings regenerate and grow, the temporary openings provide some benefits of a pine barrens community.

Management Areas 2B, 3B, 4B, and 4C are sometimes called Alternative Management Areas (AMA), since management area prescriptions in these areas make use of modified silvicultural methods to guide commercial timber harvest so that it enhances progression toward restoration goals. Compared to some of the other management areas, AMAs have higher potential for restoring species composition and other ecological components that are present at a low level or missing altogether. Allocations of AMAs vary across Alternatives 2-9 and the Selected Alternative.

The Landscape Pattern Problem Statement is primarily addressed by the amount of Management Areas 2B, 3B, 4B, and 4C allocation across alternatives. While patch size varies for each vegetative community, these management areas emphasize management to maintain larger vegetation patches that provide landscape scale interior forest or large patches of open land management.

Old Growth was not specifically designated in the 1986 Forest Plans but was designated or deferred from management in project level decisions. This led to inconsistencies in criteria and little coordination on locations of Old Growth areas. Alternatives 2-9 and the Selected Alternative designate varying acreage of Old Growth and Natural Feature Complexes. Natural feature complexes are assemblages of communities that occur together, such as northern hardwood on glacial-produced drumlins, next to hemlock areas, that transition to black ash swamps in interdrumlin areas. Old Growth is addressed collectively with designation of Research Natural Areas (MA 8E) and Special Management Areas (MA 8F) in Chapter 3 of the FEIS.

### Problem #10 Wildlife

In all alternatives, with the possible exception of the No Action Alternative, ecological conditions would be managed to maintain populations of existing native and desirable non-native species, including Threatened, Endangered, and Regional Forester Sensitive species. Forestwide Standards and Guidelines in Alternatives 2-9 and the Selected Alternative call for retaining increased amounts of coarse woody debris and reserve trees during harvest activities; using Wisconsin's Forestry Best Management Practices for delineating riparian buffers; and addressing vegetation management along cold and warm water streams to influence habitat for beaver. Management area allocations that lead to varying landscape pattern, ecological restoration (including pine barrens), old growth designation, and recreation use and access patterns all affect wildlife habitats. Each of these issues is discussed and environmental consequences are displayed under their respective separate Problem Statements.

Threatened and Endangered Species (TE) populations are estimated to be stable or increasing in all alternatives for gray wolf, bald eagle, and Fassett's locoweed. There are no known breeding populations of Canada lynx or Kirtland's warbler on the Forests. None of the alternatives preclude habitat maintenance for lynx or the maintenance of corridors for their movements. At the end of the ten years, acreage of Kirtland's warbler habitat (jack pine aged 0 to 19 years) is projected to range from 19,860 acres to 23,080 acres across all alternatives.

Determinations in Appendix J, Biological Evaluation for plant and animal species included on the Regional Forester's Sensitive Species (RFSS) list, state that activities in all alternatives would not likely cause a trend toward federal listing or loss of viability. For some species, management activities are projected to have either no effect or beneficial effect. Four animal species on the RFSS list are "likely to occur" and have no known occurrences on the Forests. Habitat conditions and populations, when present, are expected to remain stable or improve under all alternatives for animal species on the RFSS list.

Management Indicators are "plant and animal species, communities, or special habitats selected for emphasis in planning, and which are monitored during forest plan implementation to assess the effects of management activities on their populations and the populations of other species with similar habitat needs which they might represent" (FSM 2620.5 WO amendment 2600-91-5). Management Indicators developed for Alternatives 2 – 9 and the Selected Alternative are different from those in the 1986 Forest Plans. These are: mature northern hardwood interior forest, mature natural red/white pine forest, pine barrens, regenerating aspen forest, gray wolf, bald eagle, northern goshawk, red-shouldered hawk, American marten, brook trout, and Canada yew.

Two characteristics of wildlife habitat that vary with management area allocation will be addressed under Problem 10 in the "Description of Alternatives" section of this chapter: 1) amount of permanent upland opening included in Forest Type Composition Objectives, and 2) amount of area with emphasis on early successional species, such as aspen.

Total area of large patches of permanent upland opening is addressed as part of Problem #3, Ecosystem Restoration. Management Area prescriptions for MAs 1-4 in Alternatives 2-9 and the Selected Alternative include permanent upland openings in their Forest Type Composition Objectives. Naturally occurring openings, such as frost pockets, and managed openings are both considered part of the permanent opening composition. Composition objectives for permanent upland openings as part of upland Forest Types include the following: MA 1—1-4%; MA 2—0-2%; MA 3B—up to 8%; MA 3C—1-3%; MA 4—2-4%. Alternatives that provide higher acreage of Management Areas 4 and 3B could be expected to provide comparatively higher number of upland openings.

Aspen vegetative emphasis dominates Management Areas 1A, 1B, and 1C. Allocation of these management areas varies across Alternatives 2-9 and the Selected Alternative

## Special Land Allocation

### Problem #7 Special Land Allocation

Management area allocations for MAs 8E and 8F represent candidate and designated Research Natural Areas (8E) and Special Management Areas (8F). Management Areas 8E and 8F are considered necessary as refugia for rare species, as important relicts of historic vegetative communities, and as reference areas for monitoring. MA 8F is also used to identify areas with unique cultural or recreational values. Acreage of these two management areas remains constant across Alternatives 2-9 and the Selected Alternative at 35,200 and 63,900 of 8E and 8F, respectively. The two Forests designated a total of 2,500 acres of Research Natural Areas and 13,000 acres of Special Areas during the implementation of the 1986 Plans.

## Timber Products

### Timber Production

Acres "Suited for Timber Harvest" are not just lands that are forested; they are also those acres considered physically suited and "appropriate" for timber harvest. Areas appropriate for timber harvest meet three requirements:

1. They have no timber harvest restrictions due to Forestwide Standards or Guidelines,
2. They have no restrictions preventing timber harvest due to Management Area prescription allocation, and
3. They have not been withdrawn from timber production by Congress, the Secretary of Agriculture, or the Chief of the Forest Service for other purposes.

Area suited for timber harvest varies across alternatives.

Allowable Sale Quantity (ASQ) is the maximum timber volume produced from suited forestland within the constraints of the Forest Plan over a decade. ASQ varies across all alternatives.

### Problem #6 Special Forest Products

Regulation of Special Forest Product gathering is accomplished through Forestwide Standards and Guidelines and is constant across Alternatives 2–9 and the Selected Alternative. The 1986 Forest Plans (Alternative 1) do not provide direction or guidance for gathering special forest products.

## Designations and Activities with No Change from 1986 Plans

A number of designations and activities will NOT change in the 2004 Forest Plan:

- Existing permittees and Easement holdings;
- Current designated Wilderness;
- Current designated Research Natural Areas
- Existing developed recreation sites, utility corridors, and electronic sites;
- Current procedures that require survey, evaluation, protection, and interpretation of historic and cultural properties;
- Current designated National Scenic and Recreational Trails; and
- Current designated scenic byways.
- A maximum forestwide average road density objective of 3.0 miles/square mile on the Nicolet and Chequamegon National Forests.

## Designations and Activities with Small Changes from 1986 Plans

Some designations and activities will show small changes from the 1986 Forest Plans:

- Minerals management—Standards and Guidelines have been adjusted to provide consistency between the two Forests and to provide a higher degree of resource protection within the authority of the Forest Service.
- Wild and Scenic River Eligibility Status—The 1986 Forest Plan identified six rivers to be studied for inclusion in the National Wild, Scenic and Recreational Rivers system. Standards and Guidelines have been modified to provide direction for

vegetation management consistent with the river corridor objectives and Recreation Opportunity Spectrum setting.

- Travel routes and water bodies were reviewed to ensure that the visual resource is appropriately protected and changes in Forestwide Standards and Guidelines have been made to provide consistency between Forests. New terminology is defined in the 2004 Forest Plan.
- Management of Heritage Resources—Forestwide Standards and Guidelines were changed to provide consistency between Forests.
- Fire Management—Standards and Guidelines have been developed for management areas. Little change is expected in risk of wildfire or fuels reduction in the Wildland Urban Interface.
- Management of Forest Health—Forestwide Standards and Guidelines were adjusted to provide consistency between Forests.
- Management of Surface Ownership, Land Adjustments, Special Uses, and Communication Sites—Forestwide Standards and Guidelines were adjusted to provide consistency between Forests.

# Description of Alternatives

## How Alternatives are Described

Each alternative for the 2004 Forest Plan is presented in the same format, with the following components:

- **Overview**—A brief summary describing response to major revision issues.
- **Responses to Forest Plan Revision Topics—**Response to specific problem areas are briefly listed for each of the four major topics addressed in the revision process. In this discussion, the terms low, medium, moderate, and high may be used to compare levels of outputs or the relative degree of environmental impacts. No absolute measures are intended by these terms.

The management areas described in Chapter 3 of the 2004 Forest Plan represent an expanded and updated array of areas compared to the set of management areas used in the 1986 Forest Plans. Table 2-1 displays a comparison between the management areas used in the 1986 Plans and in revised plan alternatives. While each major numeric category represents a different primary emphasis for the management of National Forest System lands, lettered subdivisions of each have been developed to refine the desired condition and management direction. The decimal number 0.1, 0.2, or 0.3 in the 1986 Plans refers to variations in recreation opportunity and/or road density. Refer to Chapter 3 of the 2004 Forest Plan for complete descriptions of each alphanumeric subcategory.

**Table 2-1. Comparison of Numbering Systems Used in the 1986 Plans and the Plan Revision**

| Management Area | 1986 Plan Nicolet | 1986 Plan Chequamegon | Revised Plan |
|---|---|---|---|
| **Early Successional Vegetation** | | | |
| Aspen | 1.1 and 1.2 | 1.1 and 1.2 | 1A |
| Aspen/conifer mixtures | N/A | N/A | 1B |
| Aspen mixed with Hardwood | N/A | N/A | 1C |
| **Uneven-aged Northern Hardwoods** | | | |
| Interior Northern Hardwoods Emphasis--5-20% Aspen | N/A | N/A | 2A |
| Interior Northern Hardwoods Emphasis, 0-10% Aspen | N/A | N/A | 2B |
| Northern Hardwoods, Smaller patches, 15-30% Aspen | 2.1 and 2.2 | 2.1 and 2.2 | 2C |
| **Even-aged Northern Hardwoods** | | | |
| Emphasis on Oak and Oak mixed with Pine, Larger patch sizes | N/A | N/A | 3B |
| Emphasis on Oak and Aspen, Smaller Patches | 3.1 and 3.2 | 3.1 and 3.2 | 3C |
| **Upland Conifer** | | | |
| Red, White, and Jack Pine, primarily of plantation origin | 4.1 and 4.2 | 4.1 and 4.2 | 4A |
| Red and white pine of natural origin, Large patch sizes | N/A | N/A | 4B |
| Surrogate Pine Barrens/Jack Pine Forest | N/A | N/A | 4C |
| **Wilderness/Potential Wilderness Study Areas** | | | |
| Wilderness | 5 | | 5 |
| Potential Wilderness Study Areas | N/A | N/A | 5B |
| **Semi-Primitive Non-Motorized** | | | |
| Semi-primitive Non-Motorized Area, No Vegetation Mgmt | N/A | N/A | 6A |
| Semi-primitive Non-Motorized Area, Limited Vegetation Mgmt | N/A | N/A | 6B |
| Semi-primitive Non-Motorized Area, Slightly Limited Veg Mgmt | 6.2 and 6.3 | 6 | N/A |
| **Special Designations** | | | |
| Argonne Experimental Forest | 8.2 | N/A | 8A |
| Oconto River Seed Orchard | 8.2 | N/A | 8B |
| Riley Lake Wildlife Area and Moquah Barrens Area | N/A | 8.1 | 8C |
| Wild, Scenic and Recreational River Corridors | 9.2 | 8.2 and 8.5 | 8D |
| Existing and/or Candidate Research Natural Areas | 8.1 | 8.4 | 8E |
| Special Management Areas | 8.1 | 8.6 and 8.7 | 8F |
| Old Growth and Natural Feature Complexes | N/A | N/A | 8G |
| National Recreation and Scenic Trails | N/A | 8.3 | Included in other MA's |

The emphasis in Management Areas (MAs) 1 through 4 is on vegetative communities. Examples of common recreation activities are listed below for each numeric Management Area category. However, in MAs 1-4, the recreation experience is primarily addressed by road density guidelines assigned to the land area. The various road density zones do not always correlate with management area boundaries. The open road density upper limits are displayed on maps in the Map Packet for Alternatives 2-9 and the Selected Alternative.

The primary emphasis of each numeric Management Area category can be described as follows:

- **Management Area 1**: Is characterized by simply-structured early successional forests, made up primarily of the aspen forest type. Predominant recreational uses include hunting and related activities.
- **Management Area 2**: Is characterized by large, relatively continuous, mid to late successional northern hardwood forests. In alternatives other than Alternative 1, acreage of subcategories 2A, 2B, and 2C are listed in Figures 2-2 to 2-10 for comparison. Fishing, large and small game hunting, campground and dispersed area camping, and a variety of motorized and non-motorized trail uses are the primary recreation activities.
- **Management Area 3**: Is characterized by a mixture of even-aged northern hardwoods ranging from shade intolerant early successional species to shade tolerant later successional species. Fishing, large and small game hunting, campground and dispersed area camping, and a variety of motorized and non-motorized trail uses are the primary recreation activities.
- **Management Area 4**: Is characterized by upland conifer forests mixed with other forest communities. Fishing, hunting, berry picking, camping and motorized and non-motorized trail use are potential recreational activities.
- **Management Area 5**: Consists of existing Rainbow Lake, Porcupine Lake, Whisker Lake, Headwaters, and Blackjack Springs congressionally designated Wilderness. Forces of nature are meant to be the only disturbance factors in these areas. Non-motorized and non-mechanical recreational activities such as hiking predominate. Management Area 5B consists of areas that meet criteria to be Wilderness Study Areas; disturbance factors and recreational pursuits would be very similar to Wilderness.
- **Management Area 6**: Is characterized by natural-appearing late successional forests where the Semi-Primitive Non-Motorized recreational setting is emphasized. While MA 6 in 1986 Plans allowed more timber harvest and more motorized access, forces of nature are the predominant disturbance factors in MA 6A. In 6B areas, limited vegetation management is allowed. Primitive camping, hiking, and other non-motorized recreational activities predominate. In pie charts displaying relative amounts of each management area by alternative, 6A areas are used as an indicator of the Semi-Primitive Non-Motorized experience for alternatives other than Alternative 1. This is because 6A areas provide increased emphasis on a remote experience, and MA 6B overlaps with Management Areas 1-4.
- **Management Area 8:** Includes specially designated areas including the Argonne Experimental Forest, open-land management areas, candidate and designated Research Natural Areas, and others. Recreation activities occur within Management Area 8, but recreation is not the emphasis within these MAs.

In the following section, the description of alternatives analyzed in detail is accompanied by a pie chart that shows the relative emphasis on outputs or characteristics. The display conveys the emphasis of each alternative. The terms “low, moderate, and high” in each description, place the Alternative being described in its relative position within this set of Alternatives.

## Alternatives Considered in Detail

### Alternative 1

Alternative 1 is the No Action Alternative and reflects forestwide direction from each of the Nicolet and Chequamegon 1986 Forest Plans. The two plans were independently prepared and are not necessarily consistent with each other. In describing Alternative 1, data for the Nicolet and Chequamegon may be listed separately or combined for a forestwide response. Alternative 1 meets the NEPA requirement (36 CFR 219.12(f)(7) that a no action alternative be considered. "No Action" means that management allocations, activities and management direction found in the existing forest plans, as amended, would continue.

The 1986 Nicolet National Forest Plan emphasizes resource outputs associated with large diameter hardwood and softwood vegetation. These outputs include products such as high quality sawtimber and veneer logs, wildlife associated with mature vegetation, and dispersed recreation in a forest setting featuring large diameter trees (1986 Nicolet Forest Plan, Final EIS, p 2-28). Off-road vehicles (ORV) are limited to designated, posted trails or roads. However, there are no designated ATV trails. There are few standards and guidelines related to non-motorized recreational uses and average road density goals of 3.0 miles per square mile are included.

The 1986 Chequamegon National Forest Plan emphasizes providing goods and services related to recreation, sawtimber and aspen production. It calls for meeting recreation demand, including non-motorized recreation, while meeting expected timber demand (1986 Chequamegon National Forest Plan, Final EIS Summary, p vii). Recreational opportunities are mixed. The 1986 Plan allows off-road, off-trail ORV travel unless areas or corridors are posted closed. The Plan also calls for construction of motorized trails and an average 3.0 mile per square mile road density.

In general, both the existing plans place high emphasis on timber production. A higher emphasis on early successional species provided for use of clearcutting as a major means of forest regeneration, with higher potential for small vegetation patch sizes and high contrast between patches.

#### Access and Recreation Opportunities

The two existing Forest Plans have opposite policies in relation to ATV use. The Chequamegon policy is one of "open unless posted closed," and the Nicolet policy is "closed unless posted open." Therefore, the Chequamegon provides for off-trail, off-road use as well as providing approximately 284 miles of designated ATV trails. Because of its permissive off-trail, off-road policy, the Chequamegon provides an ATV play area, where users challenge themselves on hill climbs and other ATV-related running. The Nicolet provides no areas posted open to ATVs, with the exception of short stretches of Town-maintained roads designated for ATV use by local Township governments.

The Nicolet has a road route that receives heavy use by high-clearance Off-Road Vehicles such as 4-wheel drive pickups. All roads open to the public are available for street legal vehicle driving.

Other motorized access is described below for the Forests.

**Chequamegon National Forest**. The Chequamegon National Forest Plan Environmental Impact Statement Summary (p vii) states that the 1986 Forest Transportation System consisted of over 2,200 miles of Forest System roads with an additional 231 miles of state

and county highways. Using these figures, the average road density across the Forest was stated as being 2.0 miles per square mile (miles/square mile). While that was the density of inventoried State, County, and Forest roads, inventories of sample areas indicated that an additional 3,600 miles of lower standard roads existed. Including the 3,600 miles of road, average total road density on the Chequamegon was estimated at 3.5 miles/square mile in 1986. Most recent roads data show approximately 4,000 miles of all types of roads and a total road density of 3.1 miles per square mile.

Of the 754,569 acres within Management Areas 1-4 (Chequamegon 1986 Appendices for the FEIS p B-223), about 20 percent had a goal of 2 miles/square mile total road density (Chequamegon 1986 Final EIS p II-55, acres of SPM area), and the remainder had a goal of 3.6 miles/square mile. Averaging the road density objectives assigned to management areas produced a forestwide maximum road density objective of 3.0 miles per square mile.

Open road density, that is, the miles per square mile of road corridors that are open to public vehicles, varies by management area. The 1986 Chequamegon National Forest Final EIS (p II-55) lists 52,100 acres of zero open road density areas, made up of designated Semi-Primitive Non-Motorized areas. During plan implementation, roads within these areas were closed to public use.

**Nicolet National Forest**. The Nicolet National Forest Final EIS states that in 1986 there were 4,700 miles of existing road corridors on the Forest including State, County, Forest Service system, and all other corridors. This produced an average total road density of 4.6 miles/ sq. mi.

Current (2003) inventories list almost 5,000 miles of all types of road corridors and an average total road density of 4.9 miles/square mile. The Nicolet Forest Plan (p 20) included a goal of reaching an average total road density of 3.0 miles/square mile.

The Nicolet also identified 13,600 acres of Semi-Primitive Non-Motorized areas (MA 6.2 in Nicolet Plan p 130-131). Open road density guidelines were not included in the management prescription; however, actions were intended to preserve the SPNM experience. An additional 58,600 acres of Management Area 6.3 (Nicolet Plan p 139) were designated for non-motorized recreation. However, much of this area was wetland. Finally, 110,300 acres of areas with a goal road density of 2 miles/square mile were incorporated into MAs 1-4 (1986 Nicolet Forest Plan, pp 87, 95, 103,111).

**Chequamegon and Nicolet National Forests Combined**. Today, the two Forests together provide approximately 125,000 acres of area assigned an open road density of 0.0 miles/square mile and 243,000 acres of area having a goal road density of 2.0 miles/square mile. In both of the 1986 Forest Plans, the desired condition for average total road density on the Forests was 3.0 miles/square mile. Current average forestwide total road density is 3.9 mi/sq. mi.

The Chequamegon and Nicolet together provide approximately 44,000 acres of Wilderness. No new inventory for potential Wilderness areas was done as part of the 1986 Forest Plan because the Wisconsin Wilderness Act had recently been passed in 1984.

The Chequamegon and Nicolet National Forests together provide approximately 69,000 acres of designated Semi-Primitive Non-Motorized (SPNM) areas under the 1986 Plans. Timber harvest activities are allowed within the SPNM areas, with some restrictions as to size and number of clearcuts in the 1986 Chequamegon Plan. The 1986 Nicolet Plan did not limit harvest within SPNM areas and predicted about 500 acres of clearcutting in

SPNM Goal 6.2 areas in the first decade of plan implementation. The Nicolet also identified Management Area 6.3, made up primarily of wetlands, as providing semi-primitive non-motorized setting.

### Biological Diversity

While the Chequamegon has maintained a pine barrens community since 1965, neither of the 1986 Forest Plans included language calling for sustaining ecosystems such as interior northern hardwoods or red pine/white pine communities. No management areas were identified with specified goals of restoring important ecological components lost or reduced as a result of timber cuts occurring in the late 19th and early 20th centuries. Little effort was made to manage fragmentation of habitats or to provide habitat linkages, since stand diversity and edge habitat were considered optimal ecological strategies.

Forest Type Composition Goals called for designation of approximately 5 percent of upland area as Old Growth. However, rather than designate old growth, project level decisions on the Chequamegon and on the northern part of the Nicolet, postponed activities on certain stands suited for old growth designations until the Landscape Analysis and Design Inventory process could be completed. This practice makes identifying specific old growth areas uncertain. However, assuming that the Old Growth composition goal of 5.0 percent was fulfilled, 47,000 acres of potential Old Growth are assumed to have been identified. An additional 20,600 acres of Old Growth were designated in the southern part of the Nicolet resulting in a total of 67,600 acres of Old Growth in Alternative 1.

In Alternative 1, the desired area of upland openings, expressed as a percent of forested uplands, ranges from 3 to 5 percent on the Nicolet and from 3 to 6 percent on the Chequamegon. Current upland openings comprise 2 percent of uplands on the Nicolet and 3 percent on the Chequamegon. This translates to approximately 27,000 acres of openings on both Forests combined.

Alternative 1 provides for a high amount of acreage of Management Area 1, aspen emphasis (400,000 acres). MA 1 includes composition objectives that range from 35 to 65 percent aspen within upland forestland. Existing acreage of aspen forest type is approximately 336,000 acres, or 29.8 percent of the upland forest acreage, on the Chequamegon and Nicolet combined.

### Timber and Related Products

The area Suited for Timber Harvest in the 1986 Forest Plans totaled 864,000 acres (Chequamegon Forest Plan p IV-11 and Nicolet Forest Plan p 29). Near the end of the first decade of implementation, the Chequamegon found it had over-estimated volume per acre that could be harvested. To continue producing predicted volumes, the Chequamegon accomplished timber harvest activities on lands originally deemed physically capable for timber management, but not needed to meet timber demand. In the 1986 Plan, this land area was not included in the acres suited for timber harvest. Including these additional acres, the total acres suited for timber harvest in Alternative 1 for both the Chequamegon and Nicolet was approximately 934,000 acres.

In 1986, the Chequamegon overestimated the volume that could be produced per acre of suited land when setting its ASQ at 700 Million Board Feet (MMBF) for 10 years. By entering more acres than predicted, it was able to harvest 696 million board feet.

The Nicolet, for a variety of reasons, found that fewer acres had operable harvest volumes during the plan period than was estimated. ASQ was estimated in the 1986 Plan at 970 million board feet for the first decade. The Nicolet produced 714 MMBF for the first 10 years of the 1986 plan (Task Team 22 report, USDA Forest Service, 1991). For both Forests, the combined ASQs were 1670 million board feet for the first 10-year period of the Plans. The Forests produced 1,410 MMBF during that period.

More recently, Allowable Sale Quantity for the combined Forests was recalculated for Alternative 1 using data based on new volume estimations and factoring in constraints for 1986 Standards and Guidelines. In Alternative 1, the recalculated ASQ for the Forests is 1,460 MMBF in the first decade.

Figure 2-2 summarizes the allocation of Management Area by numeric category as a percent of the Forests, under Alternative 1.

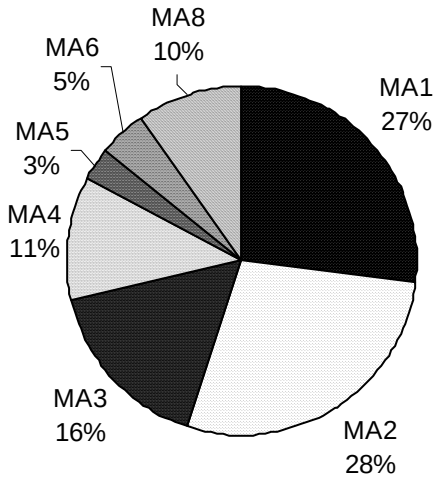


**Figure 2-2. Alternative 1—Management Area Allocation by Numeric Category**

*Management Area 1*—Simply-structured early successional forests made up primarily of the aspen forest type with mixed recreation opportunities

*Management Area 2*—Relatively continuous, mid to late successional northern hardwood forests with mixed recreation opportunities.

*Management Area 3*—Even-aged northern hardwoods with mixed recreation opportunities.

*Management Area 4*—Upland conifer forests mixed with other forest communities with mixed recreation opportunities.

*Management Area 5*—Designated Wilderness or Wilderness Study Area; non-motorized, non-mechanized recreation experience.

*Management Area 6*—Natural-appearing late successional forest where the Semi-Primitive Non-Motorized recreational setting is emphasized.

*Management Area 8*—Includes specially designated areas such as Special Areas, Candidate Research Natural Areas, Oconto Seed Orchard, and Argonne Experimental Forest.

## Alternative 2

Alternative 2 places the most emphasis of the Action Alternatives (i.e. Alternatives 2-9 and the Selected Alternative) on production and maintenance of early successional species. It also emphasizes more motorized recreation than other alternatives, provides the highest amount of new ATV trails and connectors, and provides the most months per year for ATV use of designated routes (on-road use). This alternative provides the least emphasis on northern hardwood interior forest, oak and pine forest, and on management for surrogate barrens. It provides the highest number of acres with aspen emphasis, including Alternative 1. Alternative 2 identifies one area to be recommended for Wilderness study (6,300 acres). This alternative has a combined ASQ of 1.34 billion board feet, which is second highest of the alternatives.

### Access and Recreation Opportunities

Alternative 2 has the highest amount of trail systems and connectors and the longest seasonal time period for use of designated road routes.

This alternative maintains the existing 25-mile Off-Highway, high clearance vehicle route in the Lakewood District as well as designating one additional four-wheel-drive route**.** A caveat for new trail construction is to ensure that trail maintenance/monitoring partnerships with non-Forest Service groups are in place before constructing the travelway.

Alternative 2 provides a small area zoned for zero open road density; only Alternative 1 provides less zero open road density area. Conversely, this alternative provides the highest area of alternatives with Open Road Density upper limits of 2-miles/square mile.

The number of areas recommended for Wilderness study in Alternative 2 is the second lowest of Alternatives 1-9 and the Selected Alternative, with the lowest being Alternative 1. Alternative 2 identifies only the 6,300-acre Flynn Lake to be recommended for Wilderness study.

Alternative 2 provides the fewest SPNM areas classified as 6A except for Alternative 1, which represents the existing condition. It is also second lowest in the range of alternatives for providing SPNM 6B areas and Non-Motorized with full vegetation management (NM or XX.0) experiences.

### Biological Diversity

Alternative 2 provides the least emphasis on northern hardwood interior forest other than Alternative 1. It also provides the lowest emphasis along with Alternative 5 on Oak and Pine forest; the lowest along with Alternative 6 on area of surrogate pine barrens; and the lowest emphasis of Action Alternatives on northern hardwood interior forest.

Alternative 2 provides fewer Old Growth areas, along with Alternative 5 and the Selected Alternative, than Alternatives 3, 4, 6, 7, or 9. It provides more than twice as many acres compared to Alternative 1.

Using acreage of Management Areas 4 and 3B as an indicator, Alternative 2 provides a lower amount of permanent upland openings compared to Alternatives 3-9 and the Selected Alternative. Alternative 2 provides for a high number of acres (421,000 acres) with aspen vegetative emphasis. It is highest of all alternatives, including Alternative 1, in this indicator.

## Timber and Related Products

Alternative 2 provides a high number of acres suitable for timber harvest (874,000 ac) and a high Allowable Sale Quantity (1.34 billion board feet). This alternative includes heavier emphasis on classic silvicultural methods rather than Alternative Management methods.

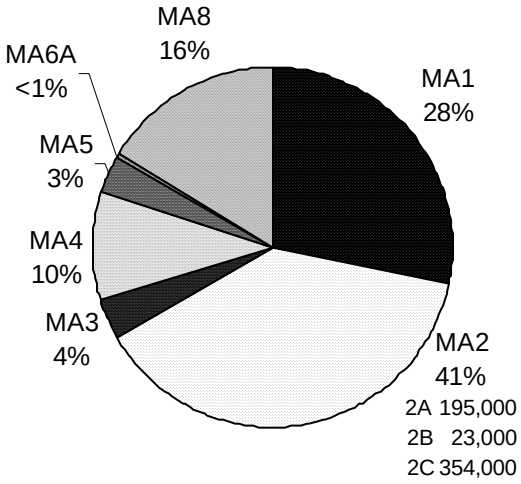


**Figure 2-3. Alternative 2—Management Area Allocation by Numeric Category**

*Management Area 1*—Simply-structured early successional forests made up primarily of the aspen forest type with mixed recreation opportunities

*Management Area 2*—Relatively continuous, mid to late-successional northern hardwood forests with mixed recreation opportunities. Acreage of subcategories MA 2A, 2B, and 2C are listed for Alternative comparison.

*Management Area 3*—Even-aged northern hardwoods with mixed recreation opportunities.

*Management Area 4*—Upland conifer forests mixed with other forest communities with mixed recreation opportunities.

*Management Area 5*—Designated Wilderness or Wilderness Study Area; non-motorized, non-mechanized recreation experience.

*Management Area 6A*—Natural-appearing late successional forest where the Semi-Primitive Non-Motorized recreational setting is emphasized. MA 6 is made up of MA 6A+6B, however, MA6A is an indicator of this setting.

*Management Area 8*—Includes specially designated areas such as Old Growth, Special Management Areas, and Candidate Research Natural Areas.

## Alternative 3

Alternative 3 places the most emphasis of all alternatives on ecosystem restoration, landscape scale interior forest conditions, and providing semi-primitive non-motorized experience. This alternative provides no new ATV trails, a low number of connectors, and does not permit ATV use on classified roads. It identifies two areas for recommended Wilderness Study Areas (8,000 acres). Alternative 3 provides the highest acreage of the alternatives in Management Area 6B Semi-Primitive Non-Motorized areas (suited timberlands) and a relatively high amount of the Management Area 6A (non-suited timberlands) Semi-Primitive Non-Motorized areas. The alternative provides for a combined ASQ of 1.24 billion board feet and provides the highest emphasis on modified silvicultural methods to achieve ecosystem restoration components. It provides a relatively low acreage of aspen emphasis.

### Access and Recreation Opportunities

Alternative 3 provides for no new trail systems, a low number of connectors, and does not allow use of ATVs on designated Forest Service road routes with the exception of connector routes**.**

It retains the existing 25-mile 4-wheel drive vehicle route in the Lakewood District and does not include any new construction for this purpose.

Alternative 3 provides a high amount of area zoned for zero open and total road density and a moderate amount of area with open road density upper limits of 2 miles/square mile.

It provides a low amount of recommended Wilderness Study Area, allocating 8,000 acres within 2 areas to be recommended for Wilderness study.

Alternative 3 provides the highest acreage of SPNM areas classified in Management Area 6B of all alternatives, a high amount of SPNM areas classified as 6A, and a moderate amount of Non-Motorized experience with full vegetation management (NM).

### Biological Diversity

Alternative 3 includes the highest acreage of Management Areas that emphasize ecosystem restoration, and provides the most emphasis on interior northern hardwood restoration of all alternatives. It provides 91,000 allocated Old Growth acres--the same as Alternative 6.

Alternative 3 provides a high amount of permanent upland openings compared to Alternatives 2, 4-9, and the Selected Alternative. It provides a low area (247,000 acres) with aspen vegetative emphasis compared to other alternatives.

### Timber Related Products

Alternative 3 provides a moderate number of acres suitable for timber harvest (830,000 ac) and a low Allowable Sale Quantity relative to other alternatives (1.24 Billion Board Feet). This is due to its high emphasis on modified silvicultural methods to achieve ecosystem restoration as well its high allocation of MA 6A .

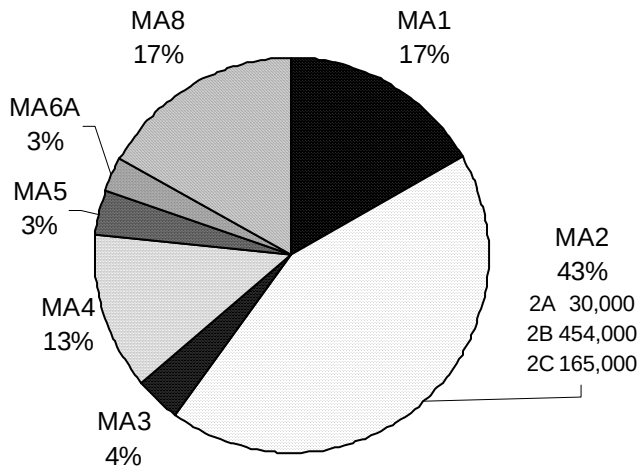


**Figure 2-4. Alternative 3—Management Area Allocation by Numeric Category**

*Management Area 1*—Simply-structured early successional forests made up primarily of the aspen forest type with mixed recreation opportunities

*Management Area 2*—Relatively continuous, mid to late-successional northern hardwood forests with mixed recreation opportunities. Acreage of subcategories MA 2A, 2B, and 2C are listed for Alternative comparison.

*Management Area 3*—Even-aged northern hardwoods with mixed recreation opportunities.

*Management Area 4*—Upland conifer forests mixed with other forest communities with mixed recreation opportunities.

*Management Area 5*—Designated Wilderness or Wilderness Study Area; non-motorized, non-mechanized recreation experience.

*Management Area 6A*—Natural-appearing late successional forest where the Semi-Primitive Non-Motorized recreational setting is emphasized. MA 6 is made up of MA 6A+6B, however, MA6A is an indicator of this setting.

*Management Area 8*—Includes specially designated areas such as Old Growth, Special Management Areas, and Candidate Research Natural Areas.

## Alternative 4

Alternative 4 responds primarily to the lack of quality remote recreational settings on the Forests by including all 8 potential Wilderness Study Areas (56,100 acres), designating the most Management Area 6A Semi-Primitive Non-Motorized acres of any alternative, and by allocating a relatively high amount of Management Area 6B Semi-Primitive Non-Motorized areas. No new ATV trails are provided, ATVs are not permitted on roads, and ATV access is not permitted on the Nicolet. This alternative provides for a moderate level of ecosystem restoration, including a moderate emphasis on landscape scale interior forest conditions. Alternative 4 provides the lowest number of suitable acres, the lowest combined ASQ of 1.22 billion board feet, and the lowest number of acres with aspen emphasis

### Access and Recreation Opportunities

Alternative 4 provides for no new trail systems, no connectors, and does not allow use of ATVs on designated Forest Service road routes.

It calls for no designated 4-Wheel Drive trails and would close and rehabilitate the existing 25-mile route in the Lakewood District. Four-Wheel Drive vehicle access would be allowed on Forest Roads open to the public assuming the vehicle is street legal.

Alternative 4 calls for more separation of uses by providing the highest number of areas with zero miles/square mile open and total road density guidelines and a moderate amount of area with upper limits of 2 miles/square mile open road density.

Alternative 4 includes the highest amount of recommended Wilderness Study Area of all alternatives**.** It identifies 56,100 acres within 8 areas as potential new areas to be recommended for Wilderness study. This includes all of the areas that met potential Wilderness criteria during the Roadless Area Inventory and Evaluation. The Roadless Area Inventory and Evaluation is summarized in Appendix C of the FEIS.

Alternative 4 emphasizes remote recreation experiences and includes the highest amount of SPNM areas classified as 6A, a high acreage of SPNM areas classified in Management Area 6B, and the lowest area of non-motorized (NM) experience within a fully managed forest.

### Biological Diversity

Alternative 4 includes a moderate acreage of management areas emphasizing ecosystem restoration and results in moderate emphasis on interior northern hardwoods. Like Alternatives 7 and 9, Old Growth is allocated at 92,600 acres, the highest level of all alternatives.

Alternative 4 provides a moderate amount of permanent upland openings compared to Alternatives 2-9 and the Selected Alternative and the lowest number of acres (241,000) with aspen vegetative emphasis (MA 1A, 1B, 1C) of all alternatives.

### Timber Related Products

Alternative 4 provides the lowest number of acres suitable for timber harvest (781,000 acres) and the lowest Allowable Sale Quantity (1.22 billion board feet) of all alternatives.

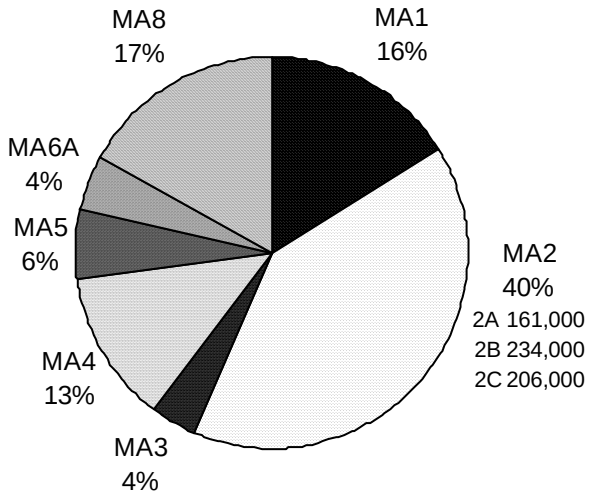


**Figure 2-5. Alternative 4—Management Area Allocation by Numeric Category**

*Management Area 1*—Simply-structured early successional forests made up primarily of the aspen forest type with mixed recreation opportunities

*Management Area 2*—Relatively continuous, mid to late-successional northern hardwood forests with mixed recreation opportunities. Acreage of subcategories MA 2A, 2B, and 2C are listed for Alternative comparison.

*Management Area 3*—Even-aged northern hardwoods with mixed recreation opportunities.

*Management Area 4*—Upland conifer forests mixed with other forest communities with mixed recreation opportunities.

*Management Area 5*—Designated Wilderness or Wilderness Study Area; non-motorized, non-mechanized recreation experience.

*Management Area 6A*—Natural-appearing late successional forest where the Semi-Primitive Non-Motorized recreational setting is emphasized. MA 6 is made up of MA 6A+6B, however, MA6A is an indicator of this setting.

*Management Area 8*—Includes specially designated areas such as Old Growth, Special Management Areas, and Candidate Research Natural Areas.

## Alternative 5

Alternative 5 provides less emphasis on ecosystem restoration. A higher percentage of the Forests are traditionally managed compared to Alternatives 3-9 and the Selected Alternative. It provides for species viability over time through protection of ecological reference areas, and through emphasis on modified silvicultural methods and ecosystem restoration. This alternative provides about equal, and relatively moderate, emphasis on both motorized and non-motorized recreation. It provides a moderate level of new ATV trails and connectors on the Forests and 3 ½ months of ATV access to classified roads per year. The alternative recommends three areas for Wilderness study (15,400 acres) and provides low amounts of opportunities for semi-primitive non-motorized recreation. The alternative provides a low to moderate emphasis on landscape scale interior forest conditions, and a moderate emphasis on Old Growth areas. It provides a moderate level of aspen emphasis. The combined ASQ for this alternative is 1.30 billion board feet.

### Access and Recreation Opportunities

Alternative 5 provides for one ATV loop trail system on the Nicolet, a moderate number of connectors, and limits ATV use on designated Forest Road routes (except connectors) to the period between September 1 and December 15. This alternative focuses on ATV use on designated roads during most hunting seasons.

Alternative 5 calls for retaining the existing 25-mile off-highway, high clearance vehicle route in the Lakewood District as well as constructing an additional route up to 25 miles long for such vehicles. The new trail would only be constructed if an agreement with a non-Forest Service entity could be developed to do trail condition monitoring and maintenance.

Alternative 5 emphasizes less separation of uses by providing a moderate to low amount of area with zero open road density, and a high amount of area with an open road density upper limit of 2 miles/ sq. mile.

Alternative 5 identifies 15,400 acres within 3 areas to be recommended for Wilderness study, and places less emphasis than some alternatives on the non-motorized experience.

It provides a low to moderate amount of SPNM areas classified as 6A, a low acreage of SPNM areas classified as 6B, and provides a moderate to high amount of Non-Motorized experience within a fully managed forest (NM).

### Biological Diversity

Alternative 5 has a high allocation of Management Area 2A. This Management Area calls for intermixing varied forest types between larger blocks of uneven-age hardwood vegetative communities. It has higher opportunity for developing northern hardwood sawtimber management regimes. It provides a moderate emphasis on Old Growth areas. Alternative 5 allocates 85,500 acres as Old Growth, the same as Alternative 2 and the Selected Alternative but the lowest of Action Alternatives.

Alternative 5 provides a moderate amount of permanent upland openings compared to Alternatives 2-9 and the Selected Alternative and allocates a moderate number of acres (286,000 acres) with aspen vegetative emphasis.

### Timber Related Products

Alternative 5 provides a high amount of acres suitable for timber harvest (863,000 acres) and a moderate to high Allowable Sale Quantity (1.30 billion board feet). This alternative has a high emphasis on traditional silvicultural methods.

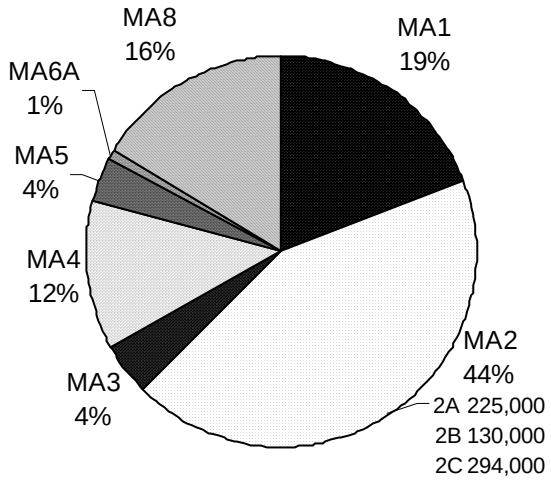


**Figure 2-6. Alternative 5—Management Area Allocation by Numeric Category**

*Management Area 1*—Simply-structured early successional forests made up primarily of the aspen forest type with mixed recreation opportunities

*Management Area 2*—Relatively continuous, mid to late-successional northern hardwood forests with mixed recreation opportunities. Acreage of subcategories MA 2A, 2B, and 2C are listed for Alternative comparison.

*Management Area 3*—Even-aged northern hardwoods with mixed recreation opportunities.

*Management Area 4*—Upland conifer forests mixed with other forest communities with mixed recreation opportunities.

*Management Area 5*—Designated Wilderness or Wilderness Study Area; non-motorized, non-mechanized recreation experience.

*Management Area 6A*—Natural-appearing late successional forest where the Semi-Primitive Non-Motorized recreational setting is emphasized. MA 6 is made up of MA 6A+6B, however, MA 6A is an indicator of this setting.

*Management Area 8*—Includes specially designated areas such as Old Growth, Special Management Areas, and Candidate Research Natural Areas.

## Alternative 6

Alternative 6 provides some emphasis on early successional forest species and moderate emphasis on biological diversity issues. There are moderate amounts of non-motorized recreational opportunities in this alternative, and more of the non-motorized areas are managed for timber. Conversion of early successional to longer-lived species progresses relatively slowly, and the alternative maintains a moderate emphasis on factors related to biological diversity. Recreation opportunities focus on Non-Motorized areas with fully managed forest (NM), on low amounts of semi-primitive non-motorized opportunities, and on low to moderate opportunities for ATV access. Alternative 6 recommends four areas for Wilderness study (29,000 acres). Its combined ASQ is 1.29 billion board feet and it provides for a high number of acres emphasizing aspen.

### Access and Recreation Opportunities

Alternative 6 and 5 are identical in proposals for ATV use. Both alternatives provide for one loop trail system on the Nicolet, a moderate number of connectors, and limit ATV use of designated, posted road routes (except connectors) to the period between September 1 and December 15.

Alternative 6 is also identical to Alternative 5 in that it calls for retaining the existing 4-wheel drive 25-mile route on the Lakewood District as well as constructing an additional route up to 25 miles long for such vehicles. The new trail would only be constructed if an agreement with a non-Forest Service entity could be developed to do trail condition monitoring and maintenance.

Alternative 6 allocates a moderate to high amount of area with open and total road density upper limits of zero miles/square mile and a high amount of area with open road density upper limits of 2 miles/square mile.

Alternative 6 includes the second highest amount of area recommended for Wilderness study, allocating 29,000 acres within 4 areas to be recommended as Wilderness Study Areas.

This alternative provides a low to moderate amount of the SPNM experience in Management Area 6A, the most remote of the SPNM designations. It also provides the lowest amount of the SPNM experience within Management Area 6B except for Alternative 1 and the Selected Alternative. Instead it provides the highest amount of Non-Motorized area with full vegetation management (NM) of all alternatives.

### Biological Diversity

Alternative 6 includes a moderate to low number of management areas emphasizing ecosystem restoration and a low to moderate number of acres of management areas that emphasize interior northern hardwoods. It provides for 91,000 acres of Old Growth, equal to Alternative 3.

Alternative 6 provides a lower amount of permanent upland openings compared to Alternatives 2-9 and the Selected Alternative. It includes a high number of acres (395,000 acres) with aspen vegetative emphasis.

### Timber Related Products

Alternative 6 provides a high number of acres suited for timber production (847,000), and a moderate to high Allowable Sale Quantity (1.29 billion board feet).

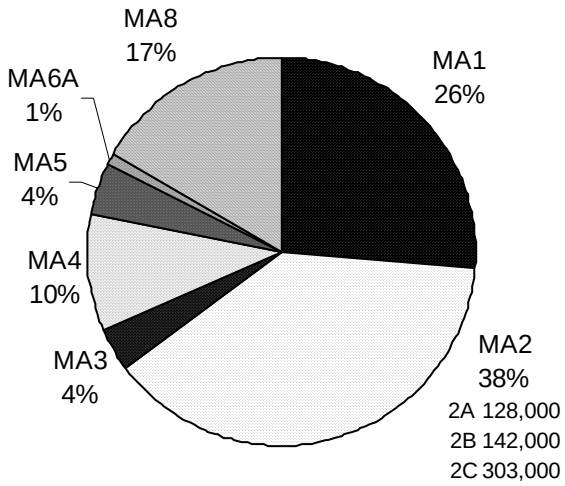


**Figure 2-7. Alternative 6—Management Area Allocation by Numeric Category**

*Management Area 1*—Simply-structured early successional forests made up primarily of the aspen forest type with mixed recreation opportunities

*Management Area 2*—Relatively continuous, mid to late-successional northern hardwood forests with mixed recreation opportunities. Acreage of subcategories MA 2A, 2B, and 2C are listed for Alternative comparison.

*Management Area 3*—Even-aged northern hardwoods with mixed recreation opportunities.

*Management Area 4*—Upland conifer forests mixed with other forest communities with mixed recreation opportunities.

*Management Area 5*—Designated Wilderness or Wilderness Study Area; non-motorized, non-mechanized recreation experience.

*Management Area 6A*—Natural-appearing late successional forest where the Semi-Primitive Non-Motorized recreational setting is emphasized. MA 6 is made up of MA 6A+6B, however, MA 6A is an indicator of this setting.

*Management Area 8*—Includes specially designated areas such as Old Growth, Special Management Areas, and Candidate Research Natural Areas.

## Alternative 7

Alternative 7 provides moderate to high emphasis on biological diversity and landscape scale patches of interior forest while producing northern hardwood sawtimber products and allocating a high amount of Old Growth areas. This alternative provides for no new ATV trails, some new ATV connectors, and no ATV road routes unless serving as connectors. Alternative 7 allocates a moderate amount of acres to semi-primitive non-motorized emphasis and recommends four areas for Wilderness study (25,800 acres). The combined ASQ for this alternative is 1.29 billion board feet and it provides for a moderate level of aspen emphasis.

### Access and Recreation Opportunities

Alternative 7 provides for no new loop trail systems, a moderate number of connectors, and does not allow ATV use on Forest roads, except on designated connectors.

It calls for maintenance of the existing 25-mile 4-wheel-drive route on the Lakewood District, using a partnership agreement for monitoring trail conditions and maintaining the trail. No new designated trails would be constructed.

Alternative 7 provides a high area of zero open and total road density, and a moderate amount of area with open road density upper limits of 2 miles per square mile.

It allocates 25,800 acres within 4 areas to be recommended for Wilderness study.

Alternative 7 provides a moderate amount of the SPNM experience within both Management Areas 6A and 6B, providing a higher quality remote recreation experience. It is ranked second among the alternatives in the amount of Non-Motorized area with full vegetation management (NM).

### Biological Diversity

Alternative 7 includes a moderate acreage of management areas with ecosystem restoration emphasis and a moderate number of acres of management areas that emphasize interior northern hardwoods**.** Old Growth and Natural Feature Complexes are allocated at 92,600 acres, the highest of alternatives along with Alternatives 4 and 9.

Alternative 7 provides a moderate to high amount of permanent upland openings compared to other alternatives and provides for a moderate number of acres (271,000 acres) with aspen vegetative emphasis.

### Timber Related Products

Alternative 7 provides a moderate number of acres suited for timber production (841,000) and a moderate Allowable Sale Quantity (1.29 billion board feet).

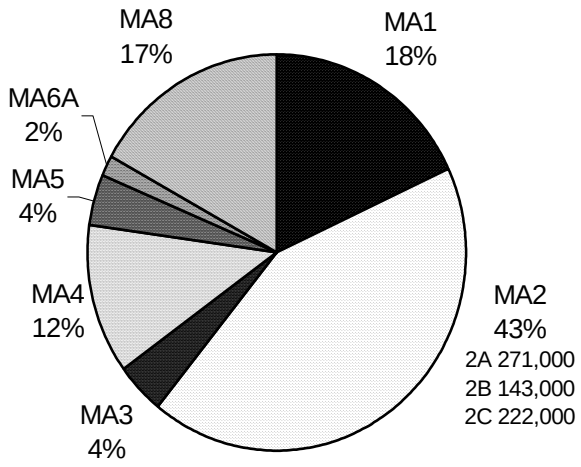


**Figure 2-8. Alternative 7—Management Area Allocation by Numeric Category**

*Management Area 1*—Simply-structured early successional forests made up primarily of the aspen forest type with mixed recreation opportunities

*Management Area 2*—Relatively continuous, mid to late-successional northern hardwood forests with mixed recreation opportunities. Acreage of subcategories MA 2A, 2B, and 2C are listed for Alternative comparison.

*Management Area 3*—Even-aged northern hardwoods with mixed recreation opportunities.

*Management Area 4*—Upland conifer forests mixed with other forest communities with mixed recreation opportunities.

*Management Area 5*—Designated Wilderness or Wilderness Study Area; non-motorized, non-mechanized recreation experience.

*Management Area 6A*—Natural-appearing late successional forest where the Semi-Primitive Non-Motorized recreational setting is emphasized. MA 6 is made up of MA 6A+6B, however, MA 6A is an indicator of this setting.

*Management Area 8*—Includes specially designated areas such as Old Growth, Special Management Areas, and Candidate Research Natural Areas.

## Alternative 9

Alternative 9 provides a high response to biological diversity issues, combined with high amounts of motorized recreation access and ATV use. This alternative provides for the most new ATV trails and connectors of all alternatives but does not permit ATV access on classified roads, except as connectors. It recommends three areas for Wilderness study (15,800 acres) and provides a low amount of the more remote form of semi-primitive non-motorized area (MA 6A), and a moderate amount of the semi-primitive non-motorized areas with timber management (MA 6B). This alternative provides the second highest emphasis on ecosystem restoration, as well as a high emphasis on landscape scale patch management and Old Growth. The combined ASQ for this alternative is 1.31 billion board feet. Emphasis on aspen management is low.

### Access and Recreation Opportunities

Alternative 9 provides for a high amount of new loop trail systems and connectors, but does not allow ATV use on Forest roads, except as connectors.

It calls for retaining the existing 25-mile off-highway, high clearance vehicle route on the Lakewood District, using a partnership agreement for monitoring trail conditions and maintaining the trail. No new trails would be constructed.

Alternative 9 provides a moderate total area with zero open and total road density and a high amount of area with open road density upper limits of 2 miles/square mile.

Alternative 9 allocates 15,800 acres in three areas to be recommended for Wilderness study.

It provides a low amount of SPNM experience created by Management Area 6A, leading to less SPNM area where vegetative management activities are not normally allowed. It calls for a moderate amount of the SPNM experience found within 6B where limited timber harvest is allowed. Alternative 9 provides a moderate to high amount of Non-Motorized area with full vegetation management (NM).

### Biological Diversity

Alternative 9 ranks second in acreage of management areas emphasizing ecosystem restoration. It also includes a high number of acres of management areas that emphasize northern hardwood interior forest.

Along with Alternatives 7 and 4, it provides for 92,600 acres of Old Growth areas. Alternative 9 provides a high amount of permanent upland openings compared to other Action Alternatives and provides for a low number of acres (251,000 acres) with aspen vegetative emphasis.

## Timber Related Products

Alternative 9 provides a moderate to high number of acres suited for timber production (861,000), and a moderate to high Allowable Sale Quantity (1.31 billion board feet).

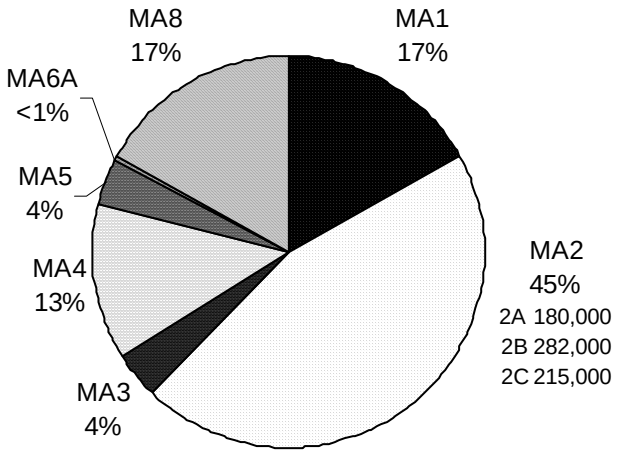


**Figure 2-9. Alternative 9—Management Area Allocation by Numeric Category**

*Management Area 1*—Simply-structured early successional forests made up primarily of the aspen forest type with mixed recreation opportunities

*Management Area 2*—Relatively continuous, mid to late-successional northern hardwood forests with mixed recreation opportunities. Acreage of subcategories MA 2A, 2B, and 2C are listed for Alternative comparison.

*Management Area 3*—Even-aged northern hardwoods with mixed recreation opportunities.

*Management Area 4*—Upland conifer forests mixed with other forest communities with mixed recreation opportunities.

*Management Area 5*—Designated Wilderness or Wilderness Study Area; non-motorized, non-mechanized recreation experience.

*Management Area 6A*—Natural-appearing late successional forest where the Semi-Primitive Non-Motorized recreational setting is emphasized. MA 6 is made up of MA 6A+6B, however, MA 6A is an indicator of this setting.

*Management Area 8*—Includes specially designated areas such as Old Growth, Special Management Areas, and Candidate Research Natural Areas.

## Selected Alternative

The Preferred Alternative (Alternative 5) was modified to create the Selected Alternative. It has increased allocation of management areas that emphasize ecosystem restoration and interior forest conditions. It retains the same emphasis on Old Growth areas as in Alternative 5. Acreage of recommended Wilderness Study Area is similar to Alternative 5 at 15,500 acres. It provides for increased species viability over time through protection of ecological reference areas and a higher allocation of management areas with modified silvicultural methods that provide for emphasis on ecosystem restoration. Like Alternative 5, the Selected Alternative provides about equal, and relatively moderate, emphasis on both motorized and non-motorized recreation. It provides a moderate level of new ATV trails on the Forests and relatively low amounts of opportunities for semi-primitive non-motorized recreation. It provides a moderate level of aspen emphasis. The combined ASQ for this alternative is 1.31 billion board feet.

### Access and Recreation Opportunities

The Selected Alternative emphasizes adaptive management in increasing ATV trail mileage on the Chequamegon (up to 100 miles), adding ATV trail mileage to the Nicolet (up to 85 miles), and designating road routes for ATV use on the Forests. Forestwide new trail construction is second only to Alternatives 2 and 9. The term connector was dropped and mileage combined for new trails and connectors. The Selected Alternative calls for designating all classified roads on the Chequamegon as ATV routes and posting them open for ATV use except: 1) on roads where the Forest does not have the authority for ATV route designation; and 2) in instances where the local Ranger District identifies and closes specific routes due to other management issues. On the Nicolet the Forest Service will collaborate with local governments and add new ATV routes that improve existing ATV systems on roads.

This alternative maintains the existing 4-wheel drive vehicle route, but includes the caveat that if safety or resource values are compromised, the route may be closed and rehabilitated. A 4-wheel drive route of the same length would be constructed elsewhere on the Forests if maintenance agreements could be developed with non-Forest entities.

The Selected Alternative ranks seventh out of the nine alternatives in non-motorized acreage (open or total road density of 0.0 miles per square mile), and second in amount of area with assigned open road density upper limits of 2.0 miles per square mile.

Areas recommended for Wilderness study are moderate with allocation of 15,500 acres within three areas. The boundary of the Porcupine Addition was modified slightly to avoid relocation of an existing snowmobile trail. Springbrook and Flynn Lake are also included as recommended Wilderness Study Areas.

MA 6A SPNM experience remains very similar to Alternative 5 at 20,100 acres. MA 6B acreage is equal to that in Alternative 6 and is ranked lowest of Action Alternatives. Non-Motorized area with full vegetation management (NM) decreased from Alternative 5 levels to 42,500 acres.

### Biological Diversity

Over 100,000 acres of management areas emphasizing ecosystem restoration were added to the Selected Alternative compared to Alternative 5, making the Selected Alternative rank fourth highest out of the nine alternatives. It also ranks fourth of all alternatives in

amount of emphasis on interior northern hardwoods. Old Growth and Natural Feature Complexes remain at 85,500 acres.

Upland opening acreage is expected to be moderate to high and acreage of aspen emphasis is approximately the same as Alternative 5 at 291,000 acres.

### Timber and Related Products

Area suited for timber production in the Selected Alternative remains moderate to high (864,000 acres) and Allowable Sale Quantity equals that of Alternative 5 at 1.31 billion board feet.

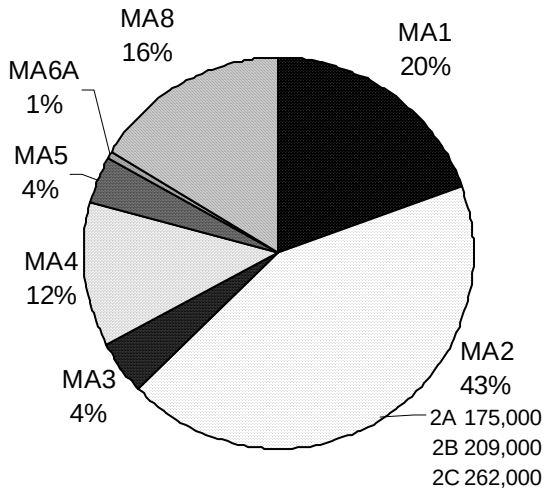


**Figure 2-10. Selected Alternative--Management Area Allocation by Numeric Category**

*Management Area 1*—Simply-structured early successional forests made up primarily of the aspen forest type with mixed recreation opportunities

*Management Area 2*—Relatively continuous, mid to late-successional northern hardwood forests with mixed recreation opportunities. Acreage of subcategories MA 2A, 2B, and 2C are listed for Alternative comparison.

*Management Area 3*—Even-aged northern hardwoods with mixed recreation opportunities.

*Management Area 4*—Upland conifer forests mixed with other forest communities with mixed recreation opportunities.

*Management Area 5*—Designated Wilderness or Wilderness Study Area; non-motorized, non-mechanized recreation experience.

*Management Area 6A*—Natural-appearing late successional forest where the Semi-Primitive Non-Motorized recreational setting is emphasized. MA 6 is made up of MA 6A+6B, however, MA 6A is an indicator of this setting.

*Management Area 8*—Includes specially designated areas such as Old Growth, Special Management Areas, and Candidate Research Natural Areas.

## Alternatives Considered but Eliminated from Detailed Study

The following alternatives were considered in the analysis, but were eliminated from further detailed study.

### Alternatives that: emphasized early successional habitat; employed limited emphasis on Ecosystem Restoration; and emphasized increases in motorized or non-motorized recreation, but not both.

Early development of Alternatives 8 and 2 took a similar approach with regard to ecological issues, emphasizing early successional forest species management and applying limited emphases on land allocation to ecosystem restoration and old growth areas. This approach represented low response to the biological diversity issue. These two alternatives differed primarily in their emphasis on motorized vs. non-motorized recreational opportunities. Alternative 8 increased opportunities for non-motorized recreation and provided little increase in motorized recreation. Alternative 2 placed a greater emphasis on increasing ATV recreational opportunities but did not emphasize increases in non-motorized recreation.

Feedback from public meetings indicated that opportunities for motorized and non-motorized use should be more balanced within the alternatives. That is, if ATV opportunities increased, the quality of non-motorized areas might suffer and larger areas or different locations for non-motorized areas should be considered to provide for a wider range of recreational opportunities. The Forests' response was to provide a greater balance for these two forms of recreation in Alternative 2, eliminating the primary difference between it and Alternative 8. Alternative 8 was therefore eliminated from further detailed study

### Alternative emphasizing maintenance of the aspen acreage present at the end of the first decade of implementation of the 1986 Plans, while concurrently addressing the revision's biological diversity issue.

Alternative 2 was originally developed to provide essentially the same emphasis on producing early successional species as the 1986 Forest Plans. The End of Decade Monitoring Report (1998) indicated that the Forests exceeded desired composition goals for aspen during the first decade. Alternative 2 was to retain the same amount of aspen forest type as that at the end of the first decade of the 1986 Plans.

As interdisciplinary discussion progressed and Forestwide Standards and Guidelines and management area prescriptions were developed, Alternative 2 as originally conceived was dropped from further consideration. Accomplishing the regeneration harvest required to maintain the level of aspen called for in the original Alternative 2 was found to be in conflict with **Minimum Management Requirements** (36 CFR 219.27) and/or with desired progress on the biological diversity portion of the **Purpose and Need** (Chapter 1, FEIS).

1. **Minimum Management Requirements** in conflict with this level of early successional habitat are:
   - ✓ Research Natural Areas and Special Management Areas were increased for all alternatives other than Alternative 1 to provide representative examples of ecosystems native to the Chequamegon-Nicolet landbase as ecological reference areas. They serve as areas for ecological monitoring and research, and as refugia

for rare species. Harvesting would not take place, and the approximately 6,000 acres of aspen within these areas would convert to other forest types over time.

- ✓ To progress toward the aquatic desired condition, "Wisconsin's Forestry Best Management Practices" were adopted as Forest Guidelines for riparian management zones. These practices call for retaining 60 basal areas of trees within 35 feet of intermittent streams and 100 feet of lakes and perennial streams.
- ✓ Some sensitive plant species locations are expected to occur within aspen areas, and Forest Standards call for a 100- to 500-foot zone of vegetation management that maintains or enhances habitat for sensitive species. Management within this zone is not likely to include clearcutting to regenerate aspen. In addition, Standards designed to protect heron rookeries and bald eagle, northern goshawk, and red-shouldered hawk breeding areas exclude land use activities in buffer zones ranging from 330- to 650-feet.

2. Examples of Plan revision changes provided by Alternative 2 that help meet the **Purpose and Need** (Chapter 1, FEIS) but conflict with maintaining the level of aspen/early successional acreage at current levels (including items which address biological diversity issues, and potential Wilderness Study Areas) follow:
   - ✓ Patches of aspen occur within management areas emphasizing larger blocks of forest to provide for interior forest conditions (Management Areas 2B, 3B, 4B). Goals for forest composition in these areas include a decrease in aspen to avoid creating openings in portions of the forest canopy. Interior forest conditions are favorable to area sensitive species such as the Northern Goshawk and Red-shouldered Hawk—species that were estimated as being at high risk of decreasing likelihood of viability by experts involved in the second Species Viability Evaluation (SVE) panel.
   - ✓ Old Growth areas were designated as management areas in Alternative 2 (and the other action alternatives). Over time, about 4,000 acres of natural conversion of aspen to other species would be expected, given the lack of timber harvest activities in those areas. In the 1986 Plans, Old Growth identification was not done as part of the Forest Plan but at the project level. Areas were often deferred from project level decisions rather than assigned a special designation. This made it difficult to display the effect Old Growth identification would have had on the existing aspen forest type in the future (Alternative 1). As a result, more aspen may be shown as currently available for harvest in Alternative 1 than was intended by project level decisions. In addition, more area is designated as Old Growth in Alternative 2 compared to the existing condition, so it can be concentrated in larger, less isolated patches. This landscape arrangement is expected to provide more ecological benefit than previous smaller, isolated old growth patches.
   - ✓ Timber management will not occur in areas recommended for Wilderness study (MA 5B). Alternative 2 includes one 6,000-acre area of MA 5B. It contains about 1,050 acres of aspen that would be expected to convert naturally to longer-lived species, eventually.
   - ✓ To maintain cold water trout streams, a Standard was developed to do partial tree removal treatments (no clearcuts) within corridors next to these streams. The Standard would ensure continued canopy shading to maintain cold water temperatures that support trout species.

### Alternative(s) providing ATV off-road, off-trail cross-country use

The original intent was to continue to provide some opportunity for off-road, off-trail use on the Chequamegon National Forest under Alternative 2. As analysis progressed, existing ATV use on the Chequamegon National Forest became more limited as Forest Supervisor Law Enforcement orders were created to restrict ATV users to designated trails and roads within areas where resource damage had occurred. Examples of resource damage include riding ATVs repeatedly in riparian areas, wetlands, and on steep slopes. See Figures 2-11 and 2-12 below.

**Figure 2-11. ATV Resource Damage in Wetland**

**Figure 2-12. ATV Resource Damage**

As ATV use continues to increase on the Forests, we expect that off-road, off-trail use would lead to increased unacceptable resource damage and additional travel restrictions such as those described above. As progressive closures limited area open to off-road or off-trail use, ATV use would become concentrated in remaining open areas, increasing the potential for damage. Therefore, Alternatives 2-9 and the Selected Alternative limit ATV use to designated trails or roads throughout the Forests, and off-road/off-trail activities are considered only in Alternative 1, the Existing Condition.

### Alternatives providing an increase in ATV intensive use areas

Alternative 1 includes one currently designated intensive use area on the Washburn District. Originally, Alternatives 2, 5, 6, 7, and 9 included up to three intensive use areas (sometimes called “play” areas) for ATVs. Each area was to be no more than 20 acres and would be developed and maintained by local ATV clubs. ATV intensive use areas were dropped from alternatives considered in detail.

The State of Wisconsin funded three ATV intensive use areas of 100, 300, and 500 acres on municipal or township property. These areas are managed as fee areas and are large enough to provide adequate funds for maintenance through fees charged. The current “play” area on the Chequamegon National Forest is much smaller—about 35 acres—and it is likely fees could not support maintenance costs for the area. Use over time has created potential safety hazards on steep slopes in the play area. It is also located very near the Moquah Barrens area. Pine barrens is a globally imperiled community and is highly susceptible to invasion by non-native species. Maintaining the play area greatly

increases the risk of spread of invasive species, through potential seed dispersal via tires of ATV operators.

In general, intensive use areas are detrimental to the landscape, even when carefully managed and maintained. As a result, the conclusion was reached that such use is not compatible with the recreational and ecological goals for these Forests. Neither an increase in size, nor a continuation of the ATV intensive use area will be considered in detail in Action Alternatives.

### An alternative considering recommendation of all Inventoried Roadless Areas mapped in the Roadless Area Conservation Rule Final Environmental Statement as Wilderness Study Areas

An alternative including all 18 Roadless Areas mapped in the Roadless Area Conservation Rule Final Environmental Impact Statement as potential Wilderness Study Areas was considered and eliminated from detailed study. The Roadless Area Conservation Rule (Rule) was published in the Federal Register on Friday, January 12, 2001 (Federal Register Vol. 66, No. 9). The purpose of the Rule is to "…provide, within the context of multiple use management, lasting protection for inventoried roadless areas within the National Forest System." The protections provided for inventoried roadless areas are two-fold: 1) prohibition on road construction and road reconstruction; and 2) prohibition on timber cutting, sale, or removal. There are exceptions to the prohibitions listed in the Rule.

The USDA Forest Service Chief's 1230/1920 letter of June 7, 2001 requires plan revisions to "…consider, as appropriate, the long-term protection and management of unroaded portions of inventoried roadless areas. This may include a determination that some roadless areas be recommended for permanent wilderness designation."

At the time the Rule was being developed, the most recent roadless area inventory for the Chequamegon-Nicolet National Forests was the Roadless Area Review and Evaluation of 1979 (RARE II). Therefore, RARE II was used to identify areas to be addressed by the Rule. RARE II identified 21 roadless areas on the Chequamegon and Nicolet National Forests in 1979. Congress subsequently designated three of the areas as Wilderness (Wisconsin Wilderness Act of 1984). The remaining 18 areas were included in the Rule analysis and are mapped in Volume 2 of the Roadless Area Conservation Rule Final Environmental Statement (RACFS).

The Wisconsin Wilderness Act of 1984 included release language so that RARE II inventoried roadless areas that were not designated as Wilderness could be managed using timber harvest. Thus roads were constructed and vegetation managed in some of the RARE II areas between 1984 and 2001.

The 2001 Rule calls for analysis of each of the RARE II areas not already designated as Wilderness, during Forest Plan revision. Part of that analysis includes identification of areas that have been "substantially altered" by road construction and subsequent timber harvest.

On January 8, 2001, a lawsuit was filed alleging that the 2001 Rule was illegal. In November of 2002, the Rule was enjoined from implementation. On December 12, 2002, the appellate court lifted the injunction. However, on July 14, 2003 the Rule was once again enjoined from implementation, this time by the Wyoming District Court. Other litigation is pending and the rule or policy related to the Rule could change in the future.

A new Chequamegon-Nicolet NF roadless area inventory, *The Forest Plan Revision Roadless Area Inventory and Wilderness Evaluation,* was begun in 1999 and the report compiled in 2002. All 18 RACFS inventoried areas were considered in that analysis as well as the rest of the land base in the two National Forests. Appendix C in this document describes the process used and displays results of the analysis.

Using the 2002 Roadless Area Inventory and Wilderness Evaluation, the Forests concluded that an alternative allocating all 18 RACFS areas as potential Wilderness Study Areas should be eliminated from detailed study. Only one of the inventoried RACFS areas, the Flynn Lake area, was included as a potential Wilderness Study Area in alternatives considered in detail. When applied in 2002, the other 17 inventoried RACFS areas did not meet minimum Roadless Inventory and Wilderness evaluation criteria, due to road construction or timber harvest done after the Wisconsin Wilderness Act was passed in 1984. The 2002 report identified 7 other potential Wilderness Study Areas in addition to Flynn Lake that are included in alternatives considered in detail.

All the areas formerly identified as RARE II roadless areas and mapped in the Roadless Area Conservation Rule Final Environmental Statement (RACFS), with the exception of the Flynn Lake area, have been assigned to management areas other than potential Wilderness Study Areas in alternatives considered in detail. More detail on treatment of RACFS areas in alternatives is included in the planning record.

### An alternative maintaining ASQs for the Chequamegon and Nicolet National Forests at the level predicted in the 1986 (current) Plans, or increasing the ASQs to the level calculated in the Maximum Timber Benchmark

An alternative that maintained timber production at or above the ASQs stated in the 1986 (current) Plans was considered but was eliminated from further analysis. The yield model for timber production calculation was improved based on information gained during 15 years of implementing the current Plans. Applying the yield model to the current plans resulted in a maximum combined (Chequamegon and Nicolet National Forests) ASQ of 1500 MMBF of timber. Acres on the Chequamegon deemed “not needed to meet demand” in the 1986 Plan were generally considered “suitable lands for timber production” in the yield model. The Purpose and Need (Chapter 1, FEIS) sets the need and rationale for addressing biological diversity on these Forests. The management changes needed to meet the Purpose and Need for biological diversity reduce timber production capability to some degree, from the 1500 MMBF level. Therefore, any further analysis of increasing ASQs beyond the 1986 level, or even maintaining ASQs at those levels, was eliminated.

### An alternative permitting departure from the policy of non-declining timber yield

An alternative to maximize timber production and to allow a departure from the policy of non-declining timber yield was considered but was eliminated from further analysis. As stated above, analysis accomplished on the 1986 Plans, in accordance with their respective Standards and Guidelines, was unable to produce the ASQs originally predicted in 1986. The Purpose and Need (Chapter 1, FEIS) sets the need and rationale for addressing biological diversity on these Forests. A departure from non-declining timber yield to increase volume outputs would conflict with the basic ecological changes needed to meet this aspect of the Purpose and Need.

# Comparison of Alternatives

This section is designed to help the reader understand and compare, in more detail, the land allocations, activities and outputs, and environmental effects of the nine alternatives. Each description tells how the alternatives respond to revision topics and problem statements. This discussion focuses on factors that display measurable differences among alternatives and summarizes more highly detailed information found in Chapter 3 of this document. Five supplemental tables, Tables 2-18 to 2-22, compare land allocations, activities, outputs, and budget costs. These tables are preceded by a narrative summary of effects by alternative.

## Supplemental Tables

- Table 2-18 compares number of acres allocated forestwide to each management area by alternative except for MA 6B. Overlap of management areas (i.e. allocation of more than one management area to the same parcel of land) has been removed from this table so that management area acreages by alternative will total, with rounding, 1.49 million acres of National Forest.
- Table 2-19 shows the number of acres allocated forestwide to each management area by alternative and displays overlapping acreages for specific management areas. It complements the Management Area maps in the map packet which show management area allocations for each of the alternatives. In many instances, more than one management area is allocated to the same parcel of ground. For example, some candidate RNAs are located within potential Wilderness Study Areas, resulting in overlapping management area allocations on maps. In Table 2-19, overlapping acreage is specifically displayed by alternative except for Management Area 6B and for non-motorized area with full vegetation management (NM). These two allocations are best thought of as “overlays” that are always layered on top of portions of Management Areas 1-4, adding additional management direction and restrictions. Management of MA 6B is accomplished by guidelines for the associated vegetation MAs 1-4 as well as specific guidelines for 6B that limit motorized access and the size, location, and duration of harvest activities. NM areas completely follow the vegetation direction of the management areas over which they are layered, but allow only non-motorized access.
- Table 2-20 and 2-21 show estimated activity levels or outcomes for each of the nine alternatives analyzed in detail in the FEIS for Decade 1 of Plan implementation. Many items in these tables parallel the forestwide objectives presented in Chapter 1 of the Forest Plan. Table 2-20 displays outcomes for Alternatives 1-9, unconstrained by budget. Table 2-21 shows expected activity levels or outcomes for the Selected Alternative in two ways. The first assumes budget levels allow full plan implementation and the second shows estimated outcomes and activity levels at continuation of the current budget level.
- Table 2-22 shows the costs associated with producing the activities and outputs described in Table 2-21. The ‘experienced budget’ represents a continuation of current funding levels. The ‘desired condition budget’ represents a forest budget level that provides full implementation of first decade outputs.

## Comparison of Effects by Alternative

The following summary of environmental and economic effects reviews the differences among alternatives and compares the effects each alternative is expected to have on the environment. The summary is presented by revision topic and problem statement. Social and economic impacts, fire management, and minerals management are also discussed. For a complete disclosure of environmental effects and economic and social impacts, consult Chapter 3 of this document.

### Access and Recreation Opportunities

#### Problem #1 — All-Terrain and Off-Road Vehicles/Motorized Access

National Forests provide large blocks of land that offer a more remote motorized experience, and can also provide connections with motorized trail systems that occur on lands managed by State, County, and other ownership. Demand for ATV access increased beyond expectations since the 1986 Forest Plan was developed. ATV policies are very different between the Forests – permitted on most of the Chequamegon, and prohibited on most of the Nicolet. A comprehensive ATV policy is needed on both Forests that provides quality ATV experiences, protects natural resources, considers interaction with conflicting recreational activities, provides connecting trails or routes between trails on neighboring lands, is reasonably enforceable, and treats the two Forests more equitably with regard to ATV access.

A combined Chequamegon and Nicolet ATV policy in Alternatives 2-9 and the Selected Alternative includes:

- No off-trail or off-road use.
- No intensive-use or play areas.
- NF roads and trails closed to ATVs unless posted open.
- In the Selected Alternative, ATV use terminology is simplified. ATV travelways are described as either trails or routes, and mileage for connectors and trails was combined. A trail generally travels through the forest and does not make use of classified forest system roads. An ATV route follows classified forest system roads where signed for ATV usage.
- Approximately 284 miles of ATV trails on the Chequamegon National Forest currently exist. Table 2-2 displays maximum trail construction forestwide using combined connector/trail figures for all alternatives. Alternatives 2 and 9 offer the most potential for ATV use on both Forests, both with a maximum of 290 miles of new trails/connectors. They are followed by the Selected Alternative (185 miles), Alternatives 5 and 6 (135 miles), Alternative 7 (100 miles), and Alternative 3 (40 miles). Alternatives 1 and 4 do not add trails or connectors to the Nicolet or Chequamegon.

**Table 2-2. Maximum Miles of ATV Trails**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| **Miles of Existing Trails** | | | | | | | | | |
| **Chequamegon** | 284 | 284 | 284 | 284 | 284 | 284 | 284 | 284 | 284 |
| **Maximum New ATV Trails (mi)** | | | | | | | | | |
| **Chequamegon** | 0 | 110 | 20 | 0 | 50 | 50 | 50 | 110 | 100 |
| **Nicolet** | 0 | 180 | 20 | 0 | 85 | 85 | 50 | 180 | 85 |
| **Max Total Miles ATV Trails** | | | | | | | | | |
| **Chequamegon** | 284 | 394 | 304 | 284 | 334 | 334 | 334 | 394 | 384 |
| **Nicolet** | 0 | 180 | 20 | 0 | 85 | 85 | 50 | 180 | 85 |
| **Maximum Miles, Forestwide** | 284 | 574 | 324 | 284 | 419 | 419 | 384 | 574 | 469 |

The Selected Alternative uses an adaptive management approach to new trail construction to help find a level of ATV/ORV access that satisfies the demand for additional recreational opportunities without causing unacceptable resource damage or conflicts with other forest visitors.

Seasonal ATV road use also varies across alternatives and is displayed in Table 2-3. Use of designated ATV road routes is similar in Alternatives 1, 2, and the Selected Alternative. Alternative 1 offers year-round ATV use on the Chequamegon, while Alternative 2 and the Selected Alternative permit year-round ATV use except during the 2-month spring break-up. Alternatives 5 and 6 allow ATV use on designated roads for 3½ months per year during the fall hunting season. This contrasts with Alternatives 3, 4, 7, and 9 that deny ATV use on Forest Service roads except on those designated as connectors.

**Table 2-3. Number of Months that Designated Roads May be Used by ATVs**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| **Recreation--ATV/Off Road Vehicles** No. of Months Designated Roads may be used (Except Connectors that Occur on Roads) | 12 | 10 | 0 | 0 | 3.5 | 3.5 | 0 | 0 | 10 |

In the Selected Alternative, the procedures used to determine which roads will be designated as ATV routes and opened to ATV traffic vary between the Chequamegon and Nicolet. On the Chequamegon, ATV use will be permitted on all classified system roads except: 1) on roads where the Forest lacks the authority for ATV route designation; and 2) in instances where the local Ranger District identifies and closes specific routes for management issues such as safety, resource degradation, township concerns or recreation use conflict. On the Nicolet, the agency will work with township officials and the public to identify existing classified system roads for designation as posted ATV routes in order to enhance the existing network of town-designated ATV routes. Total mileage of the route system will depend on many factors, including the number of problems experienced (violations, resource damage, conflicts with other users, etc.).

Public motorized vehicles will not be permitted in potential Wilderness Study Areas (MA 5B), Semi-Primitive Non-Motorized areas (SPNM; MA 6A and 6B), and Non-Motorized areas with full vegetation management (NM). In some alternatives, existing ATV and snowmobile trails pass through some of the newly identified non-motorized areas. These trails will gradually be closed and relocated as suitable relocations can be developed and constructed. Figure 2-13 displays the miles of ATV and snowmobile trails that would need to be relocated due to the allocation of new non-motorized areas (MA 5B, 6A, 6B, and NM), by alternative. Trails that have summer ATV use would have highest priority for relocation. The Selected Alternative is second lowest of Action Alternatives. The boundary of the Porcupine Addition, a recommended Wilderness Study Area in the Selected Alternative, has been adjusted to avoid relocation of an existing snowmobile trail. More detail on trails to potentially be relocated is displayed in Appendix O.

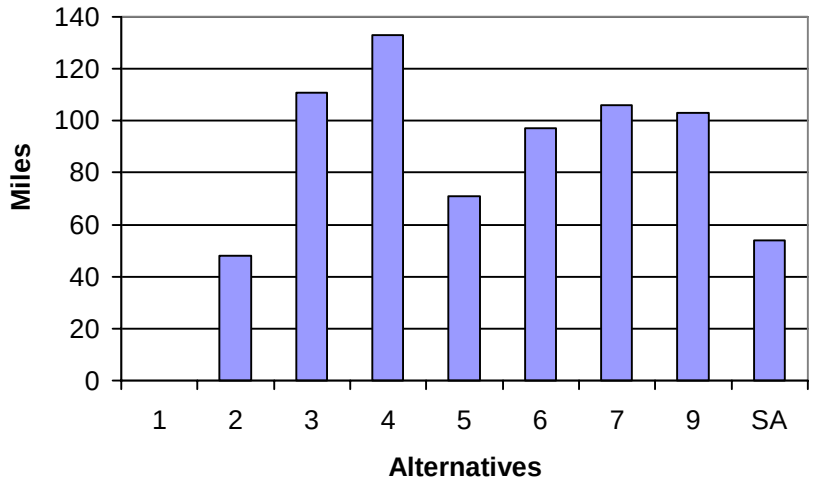


**Figure 2-13. Estimated Miles of Motorized Trails to be Relocated Due to All Non-Motorized Designations (MA 5, 5B, 6A, 6B, NM)**

Street legal 4-Wheel Drive Off-Road Vehicles (ORVs) are allowed on Forest Service roads. However, ORV users often desire a more challenging experience on designated trails. There is one existing 25-mile route providing that experience.

Miles of ORV trails vary in Alternatives 2-9 and the Selected Alternative. Alternative 4 calls for the closure and rehabilitation of the existing route. Alternatives 1, 3, 7, 9, and the Selected Alternative maintain the existing 25-mile route and add no new 4-Wheel Drive Trails. However, the Selected Alternative calls for rehabilitating the existing route and relocating it if monitoring shows that safety or natural resources are compromised, and if a maintenance agreement with non-Forest entities is developed. Alternatives 2, 5, and 6 provide the highest number of miles of 4-Wheel Drive routes with the potential for an additional ORV trail of a maximum 25-mile length.

### General motorized access

Areas open to general motorized vehicle access are extensively roaded. Current total road density estimates are displayed in Table 2-4.

**Table 2-4. Current Total Road Density[1] Estimates for the Chequamegon-Nicolet National Forests.**

| | Chequamegon NF | Nicolet NF |
|---|---|---|
| **Land Base** | 843,061 acres (1317.3 mi²) | 651,485 acres (1017.9 mi²) |
| **Miles of Road** | 4038.2 miles | 4983.8 miles |
| **Total Road Density[1]** | **3.1 mi/mi²** | **4.9 mi/mi²** |
| **Forestwide Average Total Road Density** | **3.9 mi/mi²** | |

*Note: Eighteen miles of road on the Chequamegon were not included in the analysis because of insufficient information in the inventory.*

*[1]Total miles of all open and closed roads, regardless of ownership, per square mile of National Forest land.*

The Forests retain the objective from the 1986 Plans to reach a forestwide average total road density of 3.0 miles per square mile. Alternatives make use of Recreation Opportunity Spectrum (ROS) classifications to develop road density upper limits that focus emphasis for road decommissioning. In addition, Roads Analysis terminology improves consistency of road descriptions and inventory between forests. Acres of Maximum Total Road density zones vary across alternatives and are displayed in Figure 2-14.

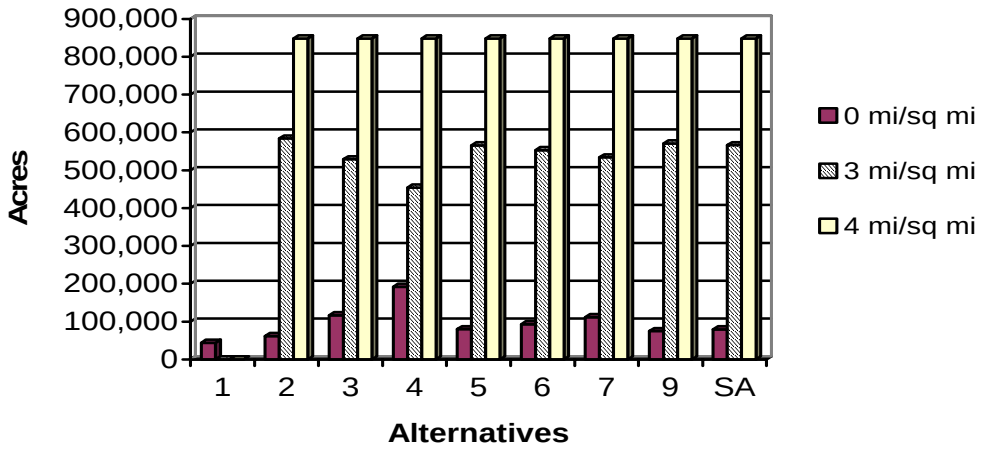


**Figure 2-14. Acres by Total Road Density (TRD) Objectives**

Total Road Density (TRD) is an indicator of total road corridors on the landscape. Approximately 2,000 miles of roads would need to be decommissioned to meet the 3.0 mile per square mile total road density goals. This could take decades depending on budgets. As shown in Table 2-5, the minimum miles of road that need to be decommissioned to achieve the different total road density guidelines of 0, 3, and 4 miles per square mile vary from 1,590 miles in Alternative 4 to 970 miles in Alternative 2. In the Selected Alternative, about 1,060 miles of road forestwide will need to be decommissioned, potentially leading to fewer opportunities over time for motorized recreation like pleasure driving and vehicle-assisted hunting and camping.

**Table 2-5. Minimum Miles of Roads (estimated) to be Decommissioned to Meet Total Road Density Objectives**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| Minimum miles of road to be decommissioned to meet all TRD objectives | N/A | 970 | 1230 | 1590 | 1060 | 1120 | 1210 | 1040 | 1060 |

Open Road Density (ORD) is an indicator of the number of roads open to public motorized vehicle use. More roads may exist, but public motorized use of some roads is restricted by gates or other closure devices. Road closures would be used where a non-motorized and/or semi-primitive recreational goal is desired. The current open road density on the Chequamegon-Nicolet National Forests is displayed in Table 2-6.

**Table 2-6. Current Open Road Density[1], Chequamegon-Nicolet National Forests**

| | **Chequamegon NF** | **Nicolet NF** |
|---|---|---|
| **Land Base** | 843,061 acres (1317.3mi²) | 651,485 acres (1017.9 mi²) |
| **Miles of Open FS Roads** | 2997.3 miles | 3064.1 miles |
| **Open Road Density[1]** | **2.2 mi/mi²** | **3.0 mi/mi²** |
| **Forestwide Average Open Road Density** | **2.6 mi/mi²** | |

*Note: Out of a total of 9,040 miles of road forestwide, eighteen miles of road on the Chequamegon land base of the Forests were not included in the analysis because of insufficient information in the inventory.*

*[1]Miles of Forest Service road open to the driving public per square mile of National Forest land.*

The need for zero open road density areas for each alternative is driven primarily by allocation of recommended Wilderness Study Areas and Semi-Primitive Non-Motorized Areas as described in the next section. Some portions of Management Areas 1-4 are also zoned non-motorized.

Areas identified in the ROS inventory as Semi-Primitive Motorized were assigned an open road density guideline of 2 miles/square mile. Additional 2.0 mi/ square mile open road density upper limits were assigned to some large blocks of interior northern hardwood (MA 2B), Moquah Barrens (part of MA 8C), potential SPNM areas if not allocated as MA 6A or B, and MA 8D (Existing and Potential Wild and Scenic River Corridors). All other areas were assigned a maximum open road density of 4-miles/sq. mi. Figure 2-15 displays the area of open road density zones across alternatives.

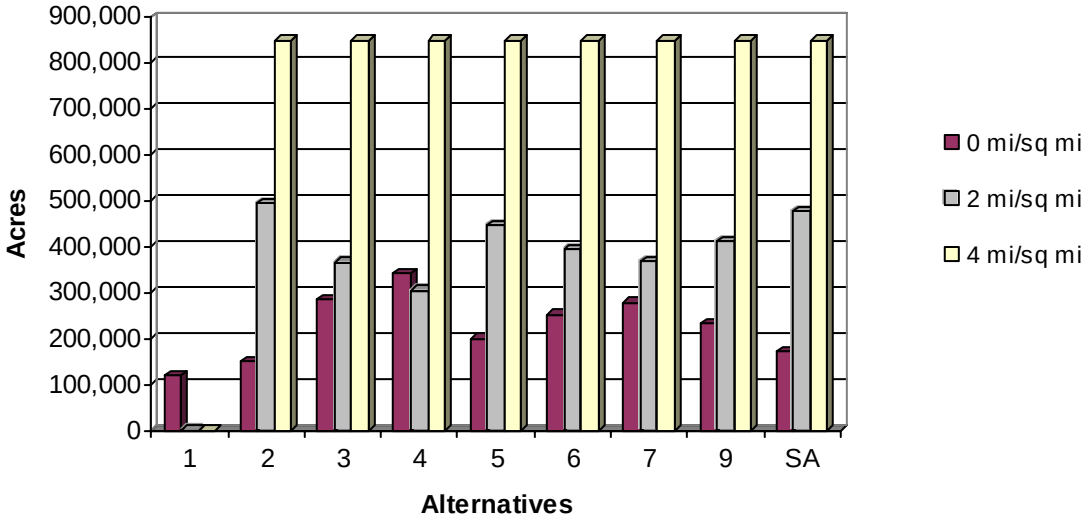


**Figure 2-15. Acres by Open Road Density (ORD) Objective**

Minimum miles of road to be closed to meet all open road density objectives (0.0 mi/sq mi, 2.0 mi/sq mi, and 4.0 mi/sq mi) are displayed in Table 2-7. Most roads to be closed are classified as Maintenance Level 2 (ML 2) and are described as primitive roads that are drivable by high clearance vehicles or used for transporting timber products. These roads are usually too rugged for passenger car traffic. Comparing the Action Alternatives to Alternative 1 is difficult, since open road guidelines were not assigned uniformly across the Forests under the 1986 Forest Plans.

**Table 2-7. Minimum Miles of Road (estimated) to be Closed to Meet Open Road Density (ORD) Objectives and Percent that are Maintenance Level 2 (low standard) Roads.**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| Minimum miles of open roads to be closed to meet ORD objectives | 120 | 670 | 1000 | 1160 | 780 | 910 | 980 | 890 | 710 |
| Percent of roads that are ML 2 | 82% | 81% | 80% | 80% | 82% | 81% | 81% | 80% | 81% |

### Problem #9 – Wilderness and Semi-Primitive Non-Motorized (SPNM) Areas

Eight inventoried (2002) roadless areas meet criteria for recommendation as Wilderness Study Areas. Collectively they comprise about 56,000 acres. Table 2-8 displays area names, acreage, and relative qualities of each area. “Desirable Recreation Qualities” refer to the presence of lakes, interesting topography, and other factors indicative of an area’s potential to offer quality non-motorized recreation experiences. Ecosystem restoration values include contribution to interior northern hardwood blocks and existence of old growth characteristics. Overlap with Ecological Reference Areas indicates the acreage of existing and candidate Research Natural Areas, Special Management Areas, and Old Growth areas within potential Wilderness Study areas.

**Table 2-8. Potential Wilderness Study Areas, Size, and Qualities by Alternative.**

| | Alternatives | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 | SA | | | |
| Acres of Roadless Areas (2002 Inventory) recommended for Wilderness Study (Areas below) | 0 | 6,300 | 8,000 | 56,100 | 15,400 | 29,000 | 25,800 | 15,800 | 15,500 | **Desirable Recreation Qualities** | **Ecosystem Restoration Value** | **Overlap with Ecol. Ref. Areas** |
| | **Acres** | | | | | | | | | | | |
| **Flynn Lake--**Adjacent to Existing Wilderness | 6300 | x | x | x | x | x | x | x | x | HIGH | MED | HIGH |
| **Porcupine Lake Addition--**Adjacent to Existing Wilderness | 1700 | | x | x | x | | x | x | x 1400 ac | MED | HIGH | LOW |
| **Iron River** | 8300 | | | x | | | | | | LOW | LOW | LOW |
| **Hungry Run** | 7400 | | | x | x | x | | | | LOW | HIGH | HIGH |
| **Spring Brook** | 7800 | | | x | | x | x | x | x | MED | HIGH | HIGH |
| **Schmuland/Popple** | 7100 | | | x | | | | | | LOW | LOW | LOW |
| **Mud Lake** | 10,000 | | | x | | | x | | | LOW | HIGH | MED |
| **Stony Creek** | 7500 | | | x | | x | | | | LOW | LOW | HIGH |

Alternative 4 includes all potential Wilderness Study Areas and the largest number of total acres. Alternative 9 and the Selected Alternative include only areas that have medium or high recreation experience potential as well as medium or high ecological value. In the Selected Alternative, the boundary of Porcupine Lake Addition was adjusted northeastward to avoid including an existing snowmobile trail within the area. Alternatives 2-9 and the Selected Alternative include Flynn Lake as a potential Wilderness Study Area; it is the only area ranked high for recreation quality. Two of the areas are adjacent to existing Wilderness. Flynn Lake is next to the existing Rainbow Lake Wilderness with a Township-maintained road separating the two. Porcupine Lake Addition is adjacent to the existing Porcupine Wilderness.

### Semi-Primitive Non-Motorized designations

Comments regarding the semi-primitive non-motorized opportunities on the Forests were received from recreationists and referenced in the End of Decade Report for the 1986 Chequamegon-Nicolet National Forest Plans. These comments indicated that while there seems to be enough Semi-Primitive Non-Motorized (SPNM) areas, the quality of the experience is less than desired. In particular, there is a desire for more remoteness and solitude. Vehicle noise is commonly heard in current SPNM areas. Forest vegetation that looks different from managed areas is also desired. Inventoried SPNM areas were treated in three ways in the 2004 Forest Plan. Those allocated to Management Areas 6A include no vegetation management with the possible rare exception of salvage activities, while limited vegetation management would be allowed in areas allocated to Management Area 6B. In addition, some inventoried areas showing potential to provide an SPNM experience were designated Non-Motorized, with full vegetation management (NM).

Most SPNM areas in the 1986 Forest Plans were considered suitable for timber harvest. Alternatives 2-9 and the Selected Alternative increased the wild character and feeling of SPNM areas by restricting timber harvest in some areas, by identifying additional areas (MA 6A) with high recreational quality that are considered generally “not appropriate” for timber harvest, and by increasing the size of some existing areas. A range of 6A and 6B designations is provided across the alternatives.

Figure 2-16 compares the acreage of Management Areas 6A and 6B across alternatives. Of the two SPNM management areas, levels of human disturbance are expected to be lower in MA 6A than in MA 6B, leading to more natural settings with less evidence of forest management activities. Other characteristics, such as level of physical challenge, contact with other visitors, and sights and sounds of civilization, are likely to be about the same in MA 6A and MA 6B areas. As shown, Alternative 3 has the most acres of MA 6B of all alternatives, with 108,200 acres. Alternative 3 is followed by Alternative 4, 9, 7, 2, 5, and the Selected Alternative and Alternative 6. In terms of MA 6A allocation, Alternative 4 has the most, with 92,000 acres. Alternative 4 is followed by Alternatives 3, 7, 5 and 6, the Selected Alternative, 9, and 2. No new SPNM areas are proposed in Alternative 1.

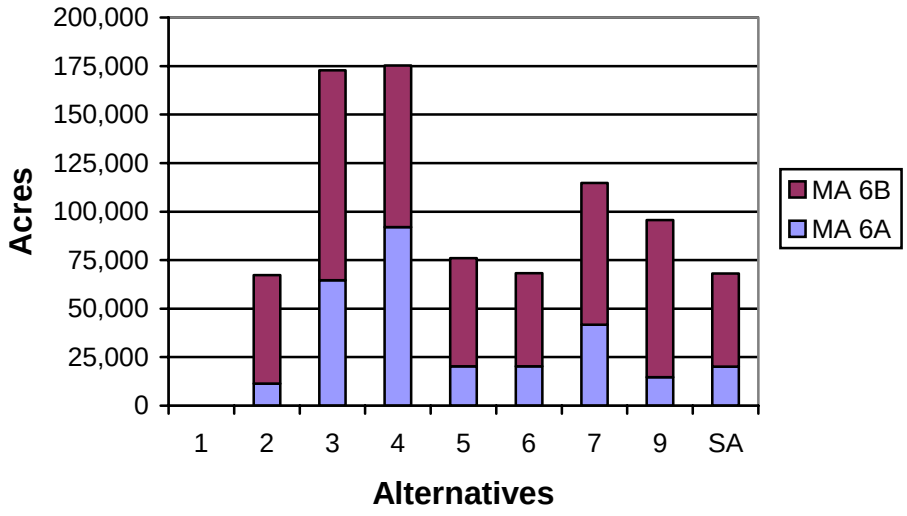


**Figure 2-16. Acres of SPNM Allocation as MA 6A and 6B**

The areas called Non-Motorized with Full Vegetation Management, (NM or XX.0) were developed, in part, in response to requests by hunters who desired a non-motorized hunting experience where early successional species predominated. These areas were identified as potential SPNM in the ROS analysis but rated lower in SPNM quality. The NM designation is essentially an overlay that lies on top of other management areas (MAs 1-4). Vegetation management follows the standards and guidelines of the underlying management area while the NM designation closes the area to motorized recreation. Roads would be present within the areas but would be closed to public motor vehicles.

Figure 2-17 shows acres of Non-Motorized area with full vegetation management compared with designated SPNM (MA 6A +6B). As in SPNM areas, less contact with other visitors, increased physical challenge, and less exposure to the sights, sounds, and smells of motors are expected in NM areas. However, because they are available for full timber management, NM areas are likely to show more evidence of human disturbance than SPNM areas. NM areas are highest in Alternative 6, at the expense of SPNM areas. Alternative 6 is followed by Alternative 7, 9, 4, 5, 3, Selected Alternative, 2, and 1 from high to low.

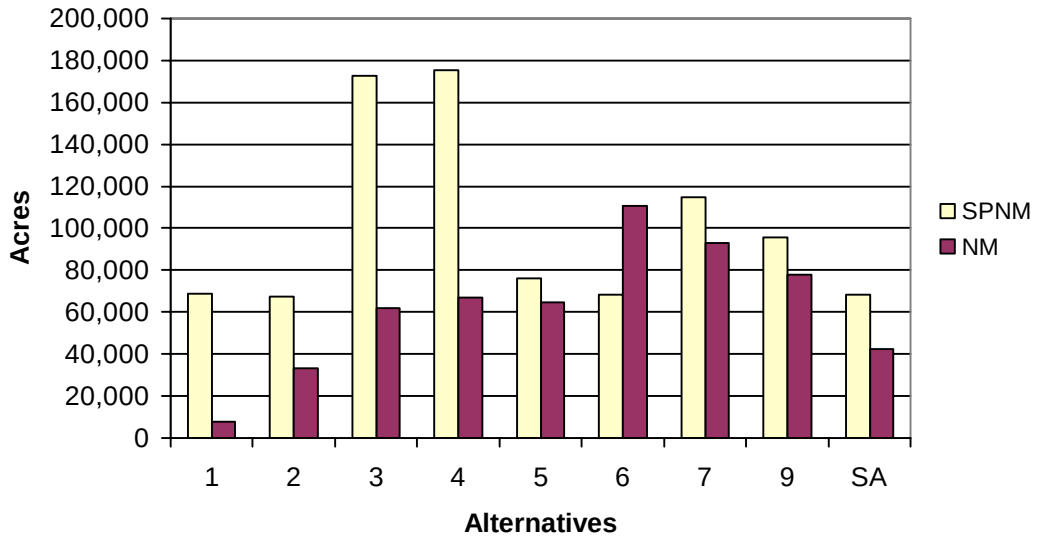


**Figure 2-17. Acres of Semi-Primitive Non-Motorized (SPNM) and Non-Motorized with Full Vegetative Management (NM) Areas by Alternative**

## Biological Diversity

### Problem # 2 – Aquatic, Riparian, and Wetland Ecosystems

An aquatic desired condition is described in Chapter 3 of the 2004 Plan. Forestwide Standards and Guidelines were developed to move toward that condition. Aquatic resources will be adequately protected in all alternatives, with the possible exception of Alternative 1. Biological evaluation of sensitive aquatic organisms indicates that with standards and guidelines that restrict ATV use to designated trails and roads, Forest Service management activities will not cause a trend toward Federal Listing or loss of viability.

Section 303(d) of the federal Clean Water Act requires each state to periodically submit to the Environmental Protection Agency (EPA) for approval a list of impaired waters. Impaired waters do not meet state water quality standards. States are required to prioritize impaired waters for treatment and develop a plan for each impaired water to achieve water quality standards, including identification of total maximum daily loads (TMDLs) for each pollutant causing impairment.

The Wisconsin Department of Natural Resources last submitted an updated list to EPA in October 2002. EPA approved the list of impaired waters in September 2003. All water bodies on the 303(d) list within the National Forest are lakes with fish consumption advisories for mercury. These include 39 lakes that cover 14,741 acres within the National Forest boundary. Wisconsin considers these fish consumption advisories to be the result of atmospheric deposition of mercury. Since traditional TMDLs are not practical for impairments caused by atmospheric deposition, states and EPA are discussing a national strategy to reduce atmospheric deposition of mercury.

### Problem # 3– Ecosystem Restoration

While forests that were heavily harvested in the late 1800s and early 1900s are largely forested today, current conditions still lack certain species characteristics and arrangements of vegetation on the landscape important to retain landscape level biodiversity and sustainable ecosystems in the Lake States and in Wisconsin (Mladnoff and Pastor 1993). Examples of species that are lacking include white pine super canopy trees within a northern hardwood forest and in mixtures with red pine; and hemlock found in combination with northern hardwoods. Spatial concerns include progressing towards a vegetation pattern made up of a large-scale matrix of northern hardwood/hemlock surrounding smaller patches of diverse vegetation types.

Based on recommendations made in the *Report on the Scientific Roundtable on Biological Diversity Convened by the Chequamegon and Nicolet National Forest* (General Technical Report NC-166) and on Range of Natural Variability estimates, three communities/ecosystems are under-represented in the regional landscape and have the highest opportunity for restoration. They include northern hardwood interior forest, red/white pine communities, and pine barrens. Red and white pine communities will take time to develop and reach mid successional stages. In the interim, oak species can fill the need for a longer-lived species in mixtures with pine. Therefore, Oak/Pine (MA 3B) communities also contribute to restoration goals. Table 2-9 displays management area acres emphasizing restoration of the three under-represented communities and the Oak/Pine community.

**Table 2-9. Area of Emphasis on Three Under-Represented Communities and the Oak/Pine Community (Acres)**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| Pine Barrens Emphasis (MA 4C+Moquah Barrens Area) | 8,000 | 24,000 | 27,000 | 27,000 | 27,000 | 24,000 | 27,000 | 27,000 | 27,000 |
| Interior Northern Hardwood Emphasis (MA 2B) | 0 | 23,000 | 454,000 | 234,000 | 130,000 | 142,000 | 143,000 | 282,000 | 209,000 |
| Natural Origin Red Pine/White Pine Emphasis (MA 4B) | 0 | 17,000 | 65,000 | 50,000 | 17,000 | 20,000 | 30,000 | 53,000 | 30,000 |
| Oak/Pine Emphasis (MA 3B) | 0 | 1,700 | 23,900 | 6,400 | 1,700 | 6,400 | 10,900 | 11,900 | 10,900 |
| **Total Acres** | **8.000** | **65,700** | **569,900** | **317,400** | **175,700** | **192,400** | **210,900** | **373,900** | **276,900** |

Alternatives 3, 4, and 9 provide the highest number of acres with emphasis on restoring under-represented communities (Table 2-9). The Selected Alternative provides about 277,000 acres, about 100,000 acres more than Alternative 5, the Preferred Alternative. Vegetative composition across the Forests would move toward restoration goals in Alternative 1. However, landscape pattern and other aspects of sustainable ecosystems are not addressed directly in this Alternative.

Over time, acres of northern hardwood communities would increase as longer-lived species replaced early successional species within Management Area 2B and, to a lesser extent, in Management Area 2A. In addition, aspen as a forest cover type would decrease, and white pine would increase over long periods of time, given Management Area Composition Guidelines in the Plan. Table 2-10 projects species composition as a percentage of the Forests' acres in 10 and 100 years.

**Table 2-10. Species Composition as a Percentage of the Forests' Upland Acres in 10 and 100 years**

| | Current | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 6 | Alt 7 | Alt 9 | SA |
|---|---|---|---|---|---|---|---|---|---|---|
| **Projected percent Species Composition in 10 years for selected species on upland acres** | | | | | | | | | | |
| Northern Hardwood Communities | 39.7% | 39.9% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% |
| Aspen | 29.8% | 29.7% | 29.2% | 29.2% | 29.0% | 29.4% | 29.3% | 29.3% | 29.1% | 29.2% |
| White Pine | 1.9% | 1.9% | 2.2% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.1% |
| **Projected percent Species Composition in 100 years for selected species on upland acres** | | | | | | | | | | |
| Northern Hardwood Communities | 39.7% | 47.1% | 47.8% | 53.6% | 53.4% | 50.2% | 50.0% | 51.6% | 51.5% | 50.7% |
| Aspen | 29.8% | 23.4% | 21.9% | 16.3% | 16.6% | 20.0% | 20.3% | 18.6% | 17.9% | 19.2% |
| White Pine | 1.9% | 2.7% | 4.7% | 4.1% | 4.1% | 3.8% | 4.2% | 3.8% | 4.2% | 3.8% |

To provide a frame of reference for ecosystem restoration activities, an estimate of the historic distribution of the ecosystems to be restored is needed. Schulte *et al.* (2002) used Public Land Survey (PLS) notes to estimate relative dominance and relative importance of tree species found in Province 212 during a period between 1832 and 1866. Relative dominance is an indicator of the number and diameter of trees (based on a summation of Basal Area), and relative importance is an indicator of density of trees within the cells (cell = 1 $mi^2$). Schulte *et al*. report relative importance values of 4.3 for Aspen and Aspen/White Pine (combined), 4.0 for Red Pine/White Pine, and 42.2 for Northern Hardwood mixtures (includes more than ten classes that are characterized by sugar maple, yellow birch, beech et al.). Relative dominance values of 3.5, 3.9, and 37.0, respectively, are shown for the same classes. Including the hemlock forest type into the northern hardwood estimates, relative importance, and dominance values are estimated at 49.1 and 44.5, respectively.

All alternatives project a decrease in aspen composition. However, Alternatives 1, 2, and 6 may come nearest to the estimated historic levels for northern hardwood communities given by Schulte *et al*. (2002). Alternative 3 is nearest to Schulte *et al's* estimated historic composition for red pine/white pine communities, and it provides the largest projected decrease in aspen composition in 100 years (Table 2-10).

Certain areas of the Forests have a higher potential for developing characteristics of under-represented vegetative communities and ecological components than others. In the action alternatives, many of these areas are assigned to management areas that take advantage of their potential for ecosystem restoration. The management areas that emphasize ecosystem restoration are sometimes called Alternative Management Areas (MA 2B, 3B, 4B, and 4C). Descriptions for these management areas include modified silvicultural methods to encourage restoration of species composition, structural components, and functional processes. The acreage of MAs 2B, 3B, 4B, and 4C varies across alternatives. Table 2-11 displays the area and the percentage of Forest landbase included as AMAs across alternatives.

**Table 2-11. Area of Management Areas 2B, 3B, 4B, 4C and Percent of Forests Made Up of These MAs Across Alternatives**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| Area of Alternative Management Areas--Acres | 0 | 51,700 | 555,900 | 303,400 | 161,700 | 178,400 | 196,900 | 359,900 | 262,900 |
| Percent of Forest Allocated as Alternative Management Areas (2B,3B,4B,4C) | 0 | 3% | 37% | 20% | 11% | 12% | 13% | 24% | 18% |

In general, Alternatives 3, 4, and 9 emphasize the most restoration of under-represented Forest communities. Alternatives 5, 6 and 7 provide moderate emphasis, and Alternatives 2 and 1 provide little or no emphasis on restoration of under-represented communities. The Selected Alternative ranks fourth among alternatives in terms of AMA allocations with 18% of the Forest in these areas (Table 2-11)

### Problem #4 Landscape Pattern

Landscape pattern is the common term describing the arrangement of habitat types in a natural setting. Landscapes have the following three structural components: **matrix,** the most connected portion of similar vegetation; **patches,** isolated portions of similar vegetation; and **corridors**, relatively narrow areas connecting patches (Diaz and Apostol, 1992). Scientists participating in the first Chequamegon-Nicolet species viability panel in 2000 had varying opinions on northern hardwood vegetative patch sizes required by species of viability concern. Forest Service planners developed Alternatives 3-9 and the Selected Alternative so that at least one contiguous northern hardwood patch of 50,000 acres or larger could be found on each Forest.

In Alternative 2, a core patch of at least 50,000 acres was created on each Forest by adding acreage allocated to Management Area 2A as well as MA 2B, 5, 5B, and 6A when measuring blocks of northern hardwood interior forest. Management Area 2A areas emphasize interior northern hardwood conditions but they also allow up to 20% of the area to be managed for early successional forest types (i.e. aspen).

These large hardwood patches provide habitat for area-sensitive species. In the opinion of species viability panel experts, retaining large hardwood patches may also reduce impacts of white-tailed deer herbivory on understory shrubs and plants. To display the differences between alternatives, Table 2-12 displays the number of patches and total area of Northern Hardwood Core Blocks and Northern Hardwood Dominated Blocks greater than 20,000 acres by alternative. Core areas include MA 2B plus Wilderness (MA 5), potential Wilderness Study Areas (MA 5B), and Semi-Primitive Non-Motorized areas with low disturbance (MA 6A) where northern hardwood composition is at least 50 percent. Northern Hardwood Dominated Areas include the Core Blocks plus Wild, Scenic and Recreational River Corridors (MA 8D) and MA 2A, uneven-age northern hardwoods with less than 20% early successional species. Minimum dimensions other than the 20,000-acre size were not applied to blocks displayed in Table 2-12. .

**Table 2-12. Number and Total Area of Northern Hardwood Patches (Blocks) Greater than 20,000 Acres by Alternative**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| Northern Hardwood Core Blocks[1] | | | | | | | | | |
| Number of Blocks | 0 | 0 | 7 | 6 | 3 | 2 | 3 | 5 | 6 |
| Total Acres (Thousands) | 0 | 0 | 530 | 284 | 175 | 121 | 148 | 255 | 286 |
| Northern Hardwood Dominated Blocks[2] | | | | | | | | | |
| Number of Blocks | 0 | 4 | 7 | 7 | 5 | 5 | 7 | 7 | 6 |
| Total Acres (Thousands) | 0 | 196 | 605 | 586 | 452 | 307 | 489 | 613 | 477 |

[1]*Core Blocks: MA 2B, & 5, 5B, 6A if currently >50% hardwood*

[2]*NH Dominated Blocks: MA 2A and 8D added to those identified for Core Areas*

Alternatives 3, 4, and the Selected Alternative provide the most patches and total area of contiguous core northern hardwood forest. Alternatives 5 and 7 have moderate emphasis on large contiguous northern hardwood patches, and Alternatives 6, 2, and 1 have little or no emphasis

A vegetation simulation model (HARVEST) was used to project area of mature northern hardwood interior forest available in 100 years under each alternative. This time frame was used to allow existing patches of early successional species to transition to longer-lived species. Assumptions included the following: 1) the forested environment excludes lowland and upland openings, as well as other openings such as water, roads, and harvested openings up to 20 years old; 2) edge habitat is defined as a 90-meter edge around each portion of interior forest; 3) a break in forest canopy consists of an opening 30 meters or more in width; and 4) mature northern hardwood is 80 years old or older and excludes all other forest types except northern hardwoods and aspen. It is assumed that aspen would convert to northern hardwood in 80 years. Figure 2-18 displays area of mature northern hardwood interior forest in 100 years by alternative. Because these model runs occurred prior to development of the Selected Alternative, it was not included in the analysis. However, based on management area allocation similarities, it is likely to fall between that of Alternatives 5 and 9.

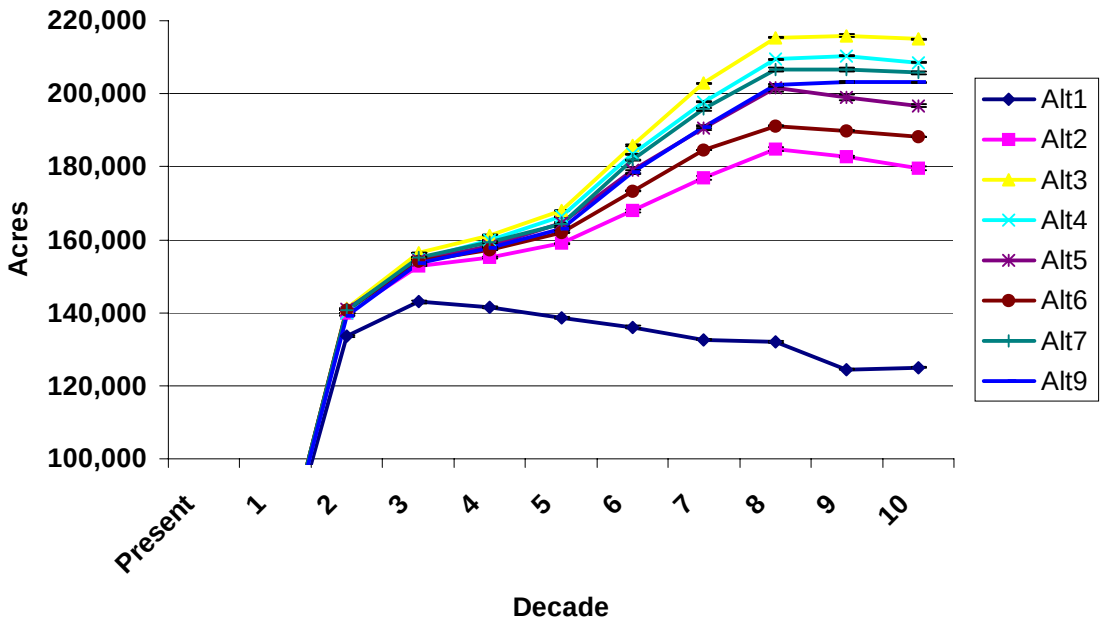


**Figure 2-18. Area of Mature Northern Hardwood Interior (90m buffer)**

Alternative 1 shows the fewest acres of mature northern hardwood interior forest available in 100 years. Ranking across alternatives from high to low is.3, 4, 7, 9, 5, 6, 2, and 1.

### Problem # 5 -- Old Growth

Old Growth is allocated as Management Area 8G in Alternatives 2-9 and the Selected Alternative. Alternative 1 did not designate Old Growth programmatically. Instead, Old Growth was included in vegetative composition guidelines and designated at the site-specific level (about 60,000 acres). Project level Old Growth designations were done on the southern part of the Nicolet. However, on the Chequamegon and the northern part of the Nicolet, potential old growth areas were deferred from project level decision, but were not designated as Old Growth Areas. Therefore, old growth acreage, over time, is uncertain in Alternative 1.

Acres of designated Old Growth vary across action alternatives. Alternatives 4, 7, and 9 are the highest with 92,600 acres, followed by Alternatives 3 and 6 with 91,000 acres, and Alternatives 2, 5, and the Selected Alternative with 85,500 acres.

### Problem # 10 – Wildlife (including Species of Concern)

Wildlife-related issues included several factors that are addressed as part of other Problem Statements. Examples are Landscape Pattern, Ecological Restoration, and Recreation Opportunities and Motorized Access. In addition, Forestwide Standards and Guidelines were revised in the 2004 Forest Plan to better address coarse woody debris and reserve tree retention, beaver populations in riparian areas, and to restrict ATV use to trails, among others (see Chapter 2 of the 2004 Forest Plan). This section summarizes effects of Forest Plan allocations on Threatened, Endangered, and Regional Forester

Sensitive species, and on two wildlife issues that were not addressed directly in other Problem Statements. Those two issues are 1) amount of upland permanent openings and 2) the amount of early successional habitat.

Threatened and Endangered Species (TE) populations are estimated to be stable or increasing in all alternatives for Gray Wolf, Bald Eagle, and Fassett's locoweed. While breeding populations are not known to be present, none of the alternatives preclude habitat maintenance for lynx or the maintenance of corridors for their movements. No known breeding populations of Kirtland's Warbler are present, however, Alternatives 2-9 and the Selected Alternative provide for the maintenance, management, and increase of Pine Barrens as a Management Indicator Community. These and surrogate pine barrens (MA 4C) may provide habitat for Kirtland's warbler. Jack pine acreage aged 0-19 years after 10 years ranges from a low of 19,860 acres (Alternative 3) to a high of 23,080 acres (Alternative 2). The Selected Alternative is projected to provide 22,910 acres of young jack pine in ten years.

Bald eagle populations are predicted to remain stable or increase under all alternatives because the quality and quantity of habitat is predicted to remain stable or increase (Tables J-29, J-30, Appendix J). The number of active bald eagle territories on the Chequamegon-Nicolet National Forests has shown a consistent upward trend over the past several decades. This trend is expected to continue as long as unoccupied suitable habitat exists.

The number of wolves on the Chequamegon-Nicolet National Forests is expected to remain stable in areas where they currently exist. As wolves colonize unused suitable habitat, especially on the eastern side of the Forests, the population is expected to increase under all alternatives. Wolves may increase at a slower rate and rise to lower levels under Alternative 1 because of a higher open road density and greater off-road vehicle access when compared to other alternatives (Appendix J).

Expected direct effects to known locations of Fassett's locoweed on the National Forests will be the same across the alternative due to Forestwide Standards and Guidelines that protect shoreline habitat (see Forestwide Standards and Guidelines, Chapter 2, of the 2004 Forest Plan) and mitigation measures specific to the species

Determinations in Appendix J, Biological Evaluation for plant species included on the Regional Forester's Sensitive Species (RFSS) list, state that activities in all Alternatives would not be likely to cause a trend toward Federal listing or loss of viability.

Four animal species on the RFSS list are "likely to occur" and have no known occurrences on the Forests. Habitat conditions and populations, when present, are expected to remain stable or improve under all alternatives for animal species.

### Management Indicators

Management Indicators are "plant and animal species, communities, or special habitats selected for emphasis in planning, and which are monitored during forest plan implementation to assess the effects of management activities on their populations and the populations of other species with similar habitat needs which they might represent" (FSM 2620.5 WO amendment 2600-91-5). Management Indicators for the 2004 Forest Plan are: mature northern hardwood interior forest, mature natural red/white pine forest, pine barrens, regenerating aspen forest, gray wolf, bald eagle, northern goshawk, red-shouldered hawk, American marten, brook trout, and Canada yew.

Effects of activities on gray wolf, bald eagle, goshawk, red-shouldered hawk, and American marten have been covered as part of Threatened, Endangered, or Sensitive species above.

The "Management Indicators" section of Chapter 3 includes several measures to display variation in alternatives for amount of mature northern hardwood interior forest, mature natural red/white pine forest, pine barrens, and regenerating aspen forest. To display effects of alternatives on area of indicator communities, Table 2-13 shows projected area of mature northern hardwood interior forest in 100 years, projected total acres of mature pine in 100 years, area of aspen less than 20 years old in 10 and 100 years, and area of pine barrens and surrogate barrens emphasis (MA 8C and MA 4C). No projections were made for the Selected Alternative for area of mature northern hardwood interior forest in 100 years, since models were run before the Selected Alternative was developed. However, due to similarities in management area allocation, the Selected Alternative is likely to fall between Alternatives 5 and 9. Aspects of the communities other than area are expected to be monitored over the life of the Forest Plan. These aspects include patch size, structural components, tree sizes, gaps in crown cover, and populations of selected songbirds.

**Table 2-13. Indicators of Effects on Management Indicator Communities**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| Projected Area of Interior, Mature Northern Hardwood after 100 years | 120,000 | 180,000 | 220,000 | 220,000 | 200,000 | 190,000 | 210,000 | 210,000 | 200,000 to 210,000* |
| Projected Total Acres of Mature Pine in 100 years | 62,900 | 71,600 | 72,700 | 71,600 | 66,600 | 68,000 | 68,100 | 71,700 | 69,900 |
| Total Acres--True Barrens | 8,000 | 14,000 | 14,000 | 14,000 | 14,000 | 14,000 | 14,000 | 14,000 | 14,000 |
| Total Acres--Surrogate Barrens Emphasis | 0 | 9,900 | 12,800 | 12,800 | 12,800 | 9,900 | 12,800 | 12,800 | 12,800 |
| Projected Acres of aspen less than 20 years old in 10 years | 77,100 | 75,100 | 74,100 | 73,600 | 75,000 | 74,500 | 74,300 | 74,400 | 74,300 |
| Projected Acres of Aspen less than 20 years old in 100 years. | 99,200 | 84,300 | 75,800 | 68,300 | 81,500 | 84,200 | 74,700 | 71,800 | 74,400 |

**No projections were made for the Selected Alternative, but due to Management Area allocation similarities, it is likely to fall between Alternatives 5 and 9.*

Of the Management Indicator species, Canada yew is a species of near viability concern, primarily because of white-tailed deer herbivory, over which the Forest Service has less control. Some scientists at Species Viability Evaluation panels suggested that large patches of closed-canopy interior forest would yield decreased deer populations locally. If so, Alternatives 3, 4, 7, and 9 would provide the most benefit to Canada yew and other plant species with similar requirements. However, scientists disagree on the effectiveness of patch size on white tailed deer herbivory when deer populations are high, such as the current situation in northern Wisconsin. Other factors such as winter severity can also affect white-tailed deer populations.

Brook trout populations are expected to remain stable or improve under all alternatives.

### Other Wildlife Factors

Management prescriptions in all alternatives tend toward a reduction in coverage of the aspen forest type. While factors other than habitat (such as natural population cycles in ruffed grouse and winter severity for white-tailed deer) affect populations of popular game species, it is likely that long-term decreases in the aspen forest type may also lead to population reductions of some game species. The aspen forest type currently is found on 336,000 upland acres of the National Forests. Table 2-14 shows area of National Forest upland comprised of the aspen forest type at 10 and 100 year across alternatives. Alternatives 3 and 4 provide the greatest decrease in aspen composition in 100 years. Alternatives 1 and 2 retain more aspen as part of forest species composition

**Table 2-14. Area (in Thousands of Acres) of Upland Forest Composed of Aspen Forest Type at Three Time Periods Across Alternatives**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Current = 336** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| In 10 years | 335 | 329 | 330 | 327 | 332 | 331 | 330 | 328 | 330 |
| In 100 Years | 264 | 247 | 184 | 187 | 226 | 229 | 209 | 202 | 216 |

Upland openings provide edge and brushy habitat for species such as white-tailed deer, ruffed grouse, and meadow voles. Forest Type Composition Objectives for several management areas call for a smaller percentage of permanent upland openings compared to 1986 management areas (Alternative 1). Other management areas provide for increased opportunity to concentrate openings into fewer, larger areas. Table 2-15 displays percent of upland within permanent openings projected 10 and 100 years from present.

**Table 2-15. Projected Percentage of Forest Upland Made up by Permanent Openings at Three Time Periods Across Alternatives (Includes Open Areas Within MA 8C and Natural Openings Such as Frost Pockets)**

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Current = 2.6%** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| In 10 years | 2.7% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.5% |
| In 100 Years | 3.4% | 2.5% | 2.5% | 2.4% | 2.3% | 2.4% | 2.3% | 2.3% | 2.3% |

In 10 years, percent upland made up of permanent openings remains stable across alternatives. In 100 years, an increase in upland openings is projected in Alternative 1. Percent upland openings remain constant in Alternative 3. Alternative 3 emphasizes concentrating openings in barrens-like communities, while Alternative 1 provides more scattered upland opening

## Special Land Allocation

### Problem # 7 – Special Land Allocation

This topic includes candidate and designated Research Natural Areas (RNAs) and Special Management Areas (SMAs). RNAs are intended for long-term study and monitoring of ecosystems or their component parts. Alternatives 2-9 and the Selected Alternative follow the draft Eastern Region and the National RNA strategy by selecting RNAs within Land Type Associations and Subsections from the National Hierarchy of Ecological Units.

SMAs contain outstanding examples of plant and animal communities, geological features, scenic grandeur, or other special attributes that merit special management. RNAs and SMAs are collectively called Ecological Reference Areas and act as refugia for rare species, recovery areas for rare species, and controls for research and monitoring. Because of these characteristics, allocation of these areas is consistent across Alternatives 2-9 and the Selected Alternative. In addition, the areas are included as part of the Minimum Level Management Requirements.

## Timber Related Products

### Problem # 8 – Timber Production

Table 2-16 displays land suitable for timber production and projected combined average annual ASQs (unconstrained by budget) at the first, fifth, and 10th decades.

**Table 2-16. Timber Suitability and Combined Average Annual Forests ASQs Across Alternatives--Chequamegon and Nicolet National Forests***

| | Unit of Measure | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 | SA |
| ASQ 1st decade | MMBF | 146 | 134 | 124 | 122 | 130 | 129 | 129 | 131 | 131 |
| ASQ 5th decade | MMBF | 178 | 169 | 151 | 148 | 166 | 164 | 160 | 160 | 163 |
| ASQ 10th decade | MMBF | 182 | 170 | 151 | 148 | 166 | 164 | 160 | 160 | 166 |
| Suited Acres | Thousands of Acres | 934 | 874 | 830 | 781 | 863 | 847 | 841 | 861 | 864 |

**ASQ values for the Chequamegon and for the Nicolet as separate forests can be found in the "Timber and Related Products" section of Chapter 3 under the headings 'Proposed Changes--Allowable Sale Quantity'.*

Potential harvest levels for Alternatives 2-9 and the Selected Alternative are less than those listed for existing management direction (Alternative 1) for every category shown. Forest Plan revision vegetation issues were driven by the need to maintain, improve, or restore the health of local ecosystems to provide for plant and animal diversity. Changes made in the action alternatives from the current management direction include changing desired species composition as well as adjusting silvicultural methods in certain areas, as recommended in the *Report on the Scientific Roundtable on Biological Diversity Convened by the Chequamegon and Nicolet Nation Forest,* (General Technical Report NC-166).

Among the action alternatives, average annual ASQ figures for the first decade in Alternatives 2, 5, 9, and the Selected Alternative are similar at 131 to 134 MMBF; Alternatives 6 and 7 are equal at 129 MMBF; and Alternatives 3 and 4 are lowest at 124 and 122 MMBF, respectively.

### Problem #6 – Special Forest Products

Special forest products are plant or fungi materials gathered for personal use, barter, commercial resale, and sale as craft products. There is no credible inventory of special forest products, and no reasonable way to estimate sustainable and ecologically sound harvest levels. All action alternatives have the same Standards and/or Guidelines for special forest products. Alternative 1 retains the current special forest products policy established in 2001 (Forest Service Handbook – Forest Supplement – 2409.22-02-1). Information needs are reflected in Chapter 4, the Monitoring and Evaluation section of

the 2004 Forest Plan, so that any needed adjustments to collection and harvest policies can be made in the future.

## Other Physical and Biological Resources

Standards and Guidelines will maintain or improve the existing soil resource and watershed resource conditions in all alternatives. Standards and Guidelines are expected to maintain adequate opportunities for private development of mineral and energy resources in all alternatives. Some opportunities for private development of mineral resources could be expected to decrease due to areas recommended for Wilderness study. A 10-year supply of gravel for Forest Service use is expected to remain available in all alternatives.

Fire will be used as a restoration and regeneration tool in open land and pine management areas. Fuel reduction will be accomplished mechanically and through prescribed fire activity following windstorms and in the Wildland/Urban interface. Prescribed fire treatment is likely to be emphasized within Management Areas 4A, 4B, and 4C as well as 3B and 8C primarily for ecosystem restoration.

## Social and Economic Environment

Several indicators are used in Chapter 3, “Economic and Social Effects” section to describe effects of alternatives on the social and economic environment. Two indicators will be displayed in this chapter to compare alternatives. They are 25% Fund payments to Counties and employment changes attributable to Forest Service resource activities.

There are three types of payment that can be made each year to local units of government to partially offset funding shortfalls from untaxed national forest lands in Wisconsin. These payments are based in the following laws: the Payments in Lieu of Taxes (PILT) Act of 1976, the Twenty-Five Percent Fund of 1908 (25% Fund), and the Secure Rural Schools and Community Self-Determination Act of 2000 (SRSCS).

Of the three, the 25% Fund is used as an indicator here. The 25% Fund authorizes the Forest Service to pay local counties that have national forest land within their boundaries 25% of the forest’s annual net revenues. The payments are to be used by the counties for school needs or road maintenance and construction. Payments are based on revenues received from timber sales, special use permit fees, and leases for minerals, oil, and gas. Table 2-17 displays estimated payments to counties in FY 2012 assuming the Forest Plan is fully funded and timber outputs are at ASQ levels. Outputs produced at predicted “experienced” budget levels, that is, budget levels based on past experience, can be found in Supplemental Tables at the end of this chapter.

The level of estimated payments is highest at $2.48 million for Alternative 1 and lowest at $2.08 for Alternative 4 and the Selected Alternative. However, when compared to the current 25% Fund amount (FY 2001), estimated potential payments increase by $275,000 (Alternatives 4 and Selected) to $675,000 (Alternative 1). Payments have the potential to increase because current management is not funded at full 1986 Forest Plan levels. The analysis therefore shows that there is the potential for increased Forest revenues, and therefore increased 25% Fund payments to counties, in all alternatives analyzed if the revised Forest Plan is fully funded.

Employment levels are used to display impacts of CNNF management on local economies. The Chequamegaon-Nicolet National Forests contribute jobs (and income) to three Economic Impact Areas:  1) The Northern Wisconsin Economic Impact Area consisting of 15 counties in northern Wisconsin and Michigan; 2) the Wisconsin Pulp and

Paper Economic Impact Area, including 9 counties in east central Wisconsin; and 3) the Northern Minnesota Economic Impact Area. Employment attributed to CNNF resource programs in 2012 is displayed in Table 2-17 for each of the three Economic Impact Areas and reflects how the number of jobs produced might change from 2001 levels by Alternative. The jobs and income attributable to the CNNF in 2001 are based on actual management activity levels, while those estimated for 2012 are under the assumption of full Plan level funding. These funding assumptions make for a constant, non-arbitrary comparison of the effects of alternatives in 2012, and demonstrate the potential for change from the Forests' current operational levels.

**Table 2-17. Economic Indicators**

| Economic/Social Effects | Current Mgmt | Alternatives—Projected Potential Annual Outputs in 2012 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 6 | 6 | 7 | 9 | SA |
| Annual Payment to Counties (25% of NF Revenues), Millions of Dollars | 1.805 | 2.480 | 2.280 | 2.105 | 2.080 | 2.230 | 2.205 | 2.205 | 2.255 | 2.080 |
| **Northern Wisconsin Economic Impact Area** | | | | | | | | | | |
| Annual Employment attributed to National Forest Programs (Number of jobs) | 15,100 | 20,000 | 17,900 | 16,600 | 16,000 | 17,500 | 17,200 | 17,000 | 17,200 | 15,900 |
| Percent Change from Current Management | 0 | 32.4 | 18.5 | 9.9 | 5.9 | 15.8 | 13.9 | 11.9 | 13.9 | 5.2 |
| **Wisconsin Pulp and Paper Economic Impact Area** | | | | | | | | | | |
| Annual Employment attributed to National Forest Programs (Number of jobs) | 11,200 | 14,900 | 14,900 | 13,500 | 13,700 | 14,100 | 14,400 | 14,000 | 14,400 | 14,000 |
| Percent Change from Current Management | 0 | 33 | 33 | 20.5 | 22.3 | 25.8 | 28.5 | 25 | 28.5 | 25 |
| **Northern Minnesota Economic Impact Area** | | | | | | | | | | |
| Annual Employment attributed to National Forest Programs (Number of jobs) | 1300 | 1000 | 900 | 900 | 800 | 900 | 900 | 900 | 900 | 900 |
| Percent Change from Current Management | 0 | -23 | -30.7 | -30.7 | -38.4 | -30.7 | -30.7 | -30.7 | -30.7 | -30.7 |

# Supplemental Tables

### Table 2-18. Comparison of Acres Allocated to Management Areas in Each Alternative with Management Area Overlap Removed

*Note: Because of rounding, total acreages for each alternative are not identical. To see acreage of Management Areas including overlap with other Management Areas, see Table 2-19.*

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Management Areas** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| **Early Successional Vegetation** | | | | | | | | | |
| **1A**- Aspen | 400,000 | 168,000 | 101,000 | 138,000 | 158,000 | 168,000 | 153,000 | 101,000 | 158,000 |
| **1B**- Aspen mixed with conifers | 0 | 86,000 | 74,000 | 27,000 | 33,000 | 81,000 | 31,000 | 78,000 | 38,000 |
| **1C**- Aspen mixed with Hardwood | 0 | 167,000 | 72,000 | 76,000 | 95,000 | 146,000 | 87,000 | 72,000 | 95,000 |
| **Uneven-aged Northern Hardwoods** | | | | | | | | | |
| **2A**- Interior Northern Hardwoods Emphasis--5-20% Aspen | 0 | 195,000 | 30,000 | 161,000 | 225,000 | 128,000 | 271,000 | 180,000 | 175,000 |
| **2B**- Interior Northern Hardwoods Emphasis, 0-10% Aspen | 0 | 23,000 | 454,000 | 234,000 | 130,000 | 142,000 | 143,000 | 282,000 | 209,000 |
| **2C**- Northern Hardwoods, Smaller patches, 15-30% Aspen | 422,000 | 354,000 | 165,000 | 206,000 | 294,000 | 303,000 | 222,000 | 215,000 | 262,000 |
| **Even-aged Northern Hardwoods** | | | | | | | | | |
| **3A-** Emphasis on Ash, Basswood, Oak | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **3B**- Emphasis on Oak and Oak mixed with Pine Larger patch sizes | 0 | 1,700 | 23,900 | 6,400 | 1,700 | 6,400 | 10,900 | 11,900 | 10,900 |
| **3C**- Emphasis on Oak and Aspen Smaller Patches | 242,000 | 54,000 | 36,000 | 48,000 | 62,000 | 46,000 | 52,000 | 48,000 | 52,000 |
| **Upland Conifer** | | | | | | | | | |
| **4A**- Red, White, and Jack Pine, primarily of plantation origin | 171,000 | 117,000 | 112,000 | 125,000 | 152,000 | 114,000 | 140,000 | 124,000 | 138,000 |
| **4B**- Red and White Pine of natural origin, Large patch sizes | 0 | 17,000 | 65,000 | 50,000 | 17,000 | 20,000 | 30,000 | 53,000 | 30,000 |
| **4C**- Surrogate Pine Barrens/Jack Pine Forest | 0 | 10,000 | 13,000 | 13,000 | 13,000 | 10,000 | 13,000 | 13,000 | 13,000 |
| **Wilderness/Potential Wilderness Study Areas** | | | | | | | | | |
| **5**- Wilderness (Includes 2000 acres of existing RNA within boundaries) | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 |
| **5B**- Potential Wilderness Study Areas[1] | 0 | 6,300 | 7,600 | 45,200 | 12,300 | 22,600 | 18,100 | 11,700 | 11,700 |
| **Semi-Primitive Non-Motorized** | | | | | | | | | |
| **1986 Goal 6-**Semi-Primitive Non-Motorized Area | 69,000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 |
| **6A**- Semi-Primitive Non-Motorized Area, No Vegetation Mgmt[1] | 0 | 2,800 | 45,200 | 65,600 | 11,200 | 11,200 | 24,500 | 6,100 | 9,000 |
| **Special Designations** | | | | | | | | | |
| **8A**- Argonne Experimental Forest | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 |
| **8B**- Oconto River Seed Orchard | 700 | 700 | 700 | 700 | 700 | 700 | 700 | 700 | 700 |
| **8C**- Riley Lake Wildlife Area and Moquah Barrens Area | 13,000 | 19,600 | 19,600 | 19,600 | 19,600 | 19,600 | 19,600 | 19,600 | 19,600 |
| **8D**- Wild, Scenic and Recreational River Corridors[1] | 41,000 | 35,000 | 35,000 | 34,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 |
| **8E**- Existing and/or Candidate Research Natural Areas | 2,500 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 |
| **8F**- Special Management Areas | 13,000 | 63,900 | 63,900 | 63,900 | 63,900 | 63,900 | 63,900 | 63,900 | 63,900 |
| **8G**- Old Growth and Natural Feature Complexes[2] | 67,600 | 85,500 | 91,000 | 92,600 | 85,500 | 91,000 | 92,600 | 92,600 | 85,500 |

[1] *Acres of MAs 8E, 8F or 8G within areas have been deleted*
[2] *Old Growth Ac in Alt 1 were allocated, but not necessarily designated*

## Table 2-19. Comparison of Acres Allocated to Management Areas in Each Alternative with Management Area Overlap Displayed

*Note: Acreages are rounded to the nearest thousand (or hundred). Because of rounding, total acreages for each alternative are not identical. In addition, some areas are assigned to more than one management prescription and get double or triple counted.*

| | Alternatives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Management Areas** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** | **SA** |
| **Early Successional Vegetation** | | | | | | | | | |
| **1A**- Aspen | 400,000 | 168,000 | 101,000 | 138,000 | 158,000 | 168,000 | 153,000 | 101,000 | 158,000 |
| **1B**- Aspen mixed with conifers | 0 | 86,000 | 74,000 | 27,000 | 33,000 | 81,000 | 31,000 | 78,000 | 38,000 |
| **1C**- Aspen mixed with Hardwood | 0 | 167,000 | 72,000 | 76,000 | 95,000 | 146,000 | 87,000 | 72,000 | 95,000 |
| **Uneven-aged Northern Hardwoods** | | | | | | | | | |
| **2A**- Interior Northern Hardwoods Emphasis--5-20% Aspen | 0 | 195,000 | 30,000 | 161,000 | 225,000 | 128,000 | 271,000 | 180,000 | 175,000 |
| **2B**- Interior Northern Hardwoods Emphasis, 0-10% Aspen | 0 | 23,000 | 454,000 | 234,000 | 130,000 | 142,000 | 143,000 | 282,000 | 209,000 |
| **2C**- Northern Hardwoods, Smaller patches, 15-30% Aspen | 422,000 | 354,000 | 165,000 | 206,000 | 294,000 | 303,000 | 222,000 | 215,000 | 262,000 |
| **Even-aged Northern Hardwoods** | | | | | | | | | |
| **3B**- Emphasis on Oak and Oak mixed with Pine Larger patch sizes | 0 | 1,700 | 23,900 | 6,400 | 1,700 | 6,400 | 10,900 | 11,900 | 10,900 |
| **3C**- Emphasis on Oak and Aspen Smaller Patches | 242,000 | 54,000 | 36,000 | 48,000 | 62,000 | 46,000 | 52,000 | 48,000 | 52,000 |
| **Upland Conifer** | | | | | | | | | |
| **4A**- Red, White, and Jack Pine, primarily of plantation origin | 171,000 | 117,000 | 112,000 | 125,000 | 152,000 | 114,000 | 140,000 | 124,000 | 138,000 |
| **4B**- Red and White Pine of natural origin, Large patch sizes | 0 | 17,000 | 65,000 | 50,000 | 17,000 | 20,000 | 30,000 | 53,000 | 30,000 |
| **4C**- Surrogate Pine Barrens/Jack Pine Forest | 0 | 10,000 | 13,000 | 13,000 | 13,000 | 10,000 | 13,000 | 13,000 | 13,000 |
| **Wilderness/Potential Wilderness Study Areas** | | | | | | | | | |
| **5**- Wilderness (Includes 2000 acres of existing RNA within boundaries) | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 | 44,000 |
| **5B**- Potential Wilderness Study Areas[1] | 0 | 6,300 | 7,900 | 56,100 | 15,400 | 29,000 | 25,800 | 15,800 | 15,500 |
| MA 5B only | 0 | 6,300 | 7,600 | 45,200 | 12,300 | 22,600 | 18,100 | 11,700 | 11,700 |
| MA 8E, 8F & 8G overlap | 0 | 0 | 300 | 10,900 | 3,100 | 6,400 | 7,700 | 4,100 | 3,800 |
| **Semi-Primitive Non-Motorized** | | | | | | | | | |
| **1986 Goal 6-**Semi-Primitive Non-Motorized Area | 69,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6A**- Semi-Primitive Non-Motorized Area, No Vegetation Mgmt | 0 | 11,300 | 64,600 | 92,000 | 20,200 | 20,200 | 41,700 | 14,700 | 20,100 |
| MA 6A only | 0 | 2,600 | 45,200 | 65,500 | 11,100 | 11,100 | 24,600 | 6,000 | 8,900 |
| MA 8E, 8F & 8G overlap | 0 | 8,700 | 19,400 | 26,500 | 9,100 | 9,100 | 17,100 | 8,700 | 11,200 |
| **6B**- Semi-Primitive Non-Motorized Area, Limited Vegetation Mgmt[1] | 0 | 56,000 | 108,000 | 83,000 | 56,000 | 48,000 | 73,000 | 81,000 | 48,000 |
| **Non-Motorized only** | | | | | | | | | |
| Non-Motorized Areas that do not limit vegetation mgmt activities | 7,600 | 33,300 | 62,000 | 67,000 | 64,500 | 110,900 | 93,100 | 78,000 | 42,500 |
| **Special Designations** | | | | | | | | | |
| **8A**- Argonne Experimental Forest | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 |
| **8B**- Oconto River Seed Orchard | 700 | 700 | 700 | 700 | 700 | 700 | 700 | 700 | 700 |
| **8C**- Riley Lake Wildlife Area and Moquah Barrens Area | 13,000 | 19,600 | 19,600 | 19,000 | 19,600 | 19,600 | 19,600 | 19,600 | 19,600 |
| **8D**- Wild, Scenic and Recreational River Corridors | 41,000 | 41,000 | 41,000 | 41,000 | 41,000 | 41,000 | 41,000 | 41,000 | 41,000 |
| MA 8D only | 41,000 | 34,800 | 34,600 | 34,300 | 34,500 | 34,400 | 34,500 | 34,500 | 34,500 |
| MA 5B overlap | 0 | 200 | 200 | 800 | 800 | 700 | 300 | 300 | 300 |
| MA 8E, 8F & 8G overlap | 0 | 6,000 | 6,200 | 5,900 | 5,700 | 5,900 | 6,200 | 6,200 | 6,200 |
| **8E**- Existing and/or Candidate Research Natural Areas | 2,500 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 |
| **8F**- Special Management Areas | 13,000 | 63,900 | 63,900 | 63,900 | 63,900 | 63,900 | 63,900 | 63,900 | 63,900 |
| **8G**- Old Growth and Natural Feature Complexes | 67,600 | 85,500 | 91,000 | 92,600 | 85,500 | 91,000 | 92,600 | 92,600 | 85,500 |

[1] *MA 6B and Non-Motorized areas with full vegetation management represent a recreation experience layered on top of areas within Management Areas 1-4, therefore total acreage for these areas is represented in several other Management Areas. See Map Sets for further information.*

## Table 2-20. Outcome or Activity Measures and Trends for Alternatives 1-9; Decade 1

[1]Column for **1986 Plans** refers to Goals, Objectives, or projected outputs included in those plans.
[2]Column for **Existing Condition** refers to actual accomplishments under the 1986 Plans
Alternative 2 – 9 Outcomes are unconstrained by budget.

| | | | | ALTERNATIVES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Outcome or Activity Measure** | **Units** | **[2]Existing Condition** | **[1]1986 Plans 1** | **2** | **3** | **4** | **5** | **6** | **7** | **9** |
| **GOAL 1: Ensure Healthy and Sustainable Ecosystems** | | | | | | | | | | |
| Population Trends for Bald Eagle | description | up | up | up | up | up | up | up | up | up |
| Population Trends for Gray Wolf | description | up | up | up | up | up | up | up | up | up |
| Population Trends for Fassett's Locoweed | description | up | stable | stable | stable | stable | stable | stable | stable | stable |
| Population Trends for Species of concern | description | stable | stable | stable or up | stable or up | stable or up | stable or up | stable or up | stable or up | stable or up |
| Percent Sensitive Plant occurrences within RNA, Candidate RNA, and SMA areas | % | Cheq 32 Nic <5 | Cheq 32 Nic <5 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| **Health of Aquatic Systems -- Decade 1** | | | | | | | | | | |
| Aquatic Ecological Classification of stream segments | % | 90% | 0% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Aquatic Ecological Classification of stream reaches | % | 0% | 0% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| Bathymetric Mapping of lakes larger than 10 acres | ea | 504 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Reduction or Mitigation of road and motorized trail stream crossings | ea | 64 | 0 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| Relocation of roads and ATV/Dual Use trails out of Riparian zones or Wetlands where feasible | mi | 5 | 0 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Stream Habitat Improvement | mi | 360 | 190 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Lake Habitat Improvement | ac | 9300 | 5600 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| **Conserve Terrestrial Ecosystems -- Decade 1** | | | | | | | | | | |
| Manage Terrestrial Habitat. This could be accomplished through activities such as prescribed burning in MA 8C, waterfowl mgmt or other smaller projects. | ac | 6000 | 5,000 | 11,000 | 11,000 | 11,000 | 11,000 | 11,000 | 11,000 | 11,000 |
| Identify Blocks of acres for restoration. Accomplish restoration activities such as prescribed burns to achieve desired understory vegetation | ac | N/A | 0 | 1,000 | 3,900 | 3,000 | 1,000 | 1,200 | 1,800 | 3,200 |
| Identify Large Blocks (1000's of acres) of Northern Hardwoods for management of Interior Forest within MA 2A and 2B (acres MA 2A and 2B) | ac | N/A | 0 | 377,000 | 619,000 | 440,000 | 424,000 | 445,000 | 365,000 | 497,000 |
| Designated Old Growth | ac | 67600[3] | 67600[3] | 85,500 | 91,000 | 92,600 | 85,500 | 91,000 | 92,600 | 92,600 |
| Designated Special Mgmt Areas and RNA's | ac | 13,500 | 13,500 | 99,000 | 99,000 | 99,000 | 99,000 | 99,000 | 99,000 | 99,000 |
| Projected acres of aspen that convert to later successional forest vegetation types | ac | N/A | 6700 | 6700 | 6400 | 9000 | 4500 | 5200 | 5900 | 8,100 |
| Treatment of Non-native Invasive Species | ac | 0 | 0 | 750 | 750 | 750 | 750 | 750 | 750 | 750 |
| Trend for Northern Hardwood average patch size | description | 30 acres[4] | stable | up | up | up | up | up | up | up |

| Outcome or Activity Measure | Units | [2]Existing Condition | [1]1986 Plans | ALTERNATIVES 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fisheries, TES, and other species inventories | ac | Not listed | Unknown | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | |
| NNIS Species Inventories | ac | Not listed | 0 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | |

[3]This includes allocated Old Growth for the Chequamegon and designated old growth for the Nicolet. Only designated OG was used in calculations of timber land suitability

[4]From Landscape Pattern AMS, 2000

**Goal 2: Provide Multiple Benefits for People**

**Recreation Opportunities**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Area of designated SPNM provided | ac | 69,000 | 69,000 | 67,300 | 172,800 | 175,200 | 76,000 | 68,200 | 114,800 | 95,700 |
| Area of designated SPNM provided with timber harvest as an exception (MA 6A) | ac | 0 | 0 | 11,300 | 64,600 | 92,000 | 20,200 | 20,200 | 41,700 | 14,700 |
| Area of designated SPNM with limited timber harvest (MA 6B) | ac | 0 | 0 | 56,000 | 108,200 | 83,200 | 55,800 | 48,000 | 73,100 | 81,000 |
| Area of designated SPNM with few or no limitations on timber harvest | ac | 69,000 | 69,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-Motorized area with full veg. mgmt. | ac | 7,600 | 7,600 | 33,300 | 62,000 | 67,000 | 64,500 | 111,000 | 93,000 | 78,000 |
| Wilderness Study Areas | ac | 0 | 0 | 6,300 | 7,900 | 56,100 | 15,400 | 29,000 | 25,800 | 15,800 |
| Wilderness Study Areas | ea | 0 | 0 | 1 | 2 | 8 | 3 | 4 | 4 | 3 |
| Total ATV Trails/Connectors | miles | 284 | 284 | 574 | 324 | 284 | 419 | 419 | 384 | 574 |

**Forest Commodities[5] -- Projected Maximum Output**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Allowable Sale Quantity | MMBF | 1410 | 1460[6] | 1340 | 1240 | 1220 | 1300 | 1290 | 1290 | 1310 |
| Allowable Sale Quantity | MMCF | 226 | 237 | 216 | 200 | 198 | 211 | 209 | 208 | 212 |
| Hardwood Sawtimber | MMBF | | 9 | 8 | 7 | 7 | 8 | 7 | 7 | 7 |
| Hardwood Pulpwood | MMBF | 690[7] | 580 | 510 | 480 | 460 | 510 | 490 | 490 | 500 |
| Softwood Products[7] | MMBF | 510 | 440 | 420 | 390 | 410 | 410 | 400 | 420 | 430 |
| Aspen Pulpwood | MMBF | 350 | 330 | 330 | 300 | 300 | 310 | 310 | 300 | 31 |

[5]Existing Condition-- Figures from 1996 End of Decade Report are Avg. Annual Outputs for 1986-1996.

[6]Projected using current Spectrum Model

[7]Includes both sawtimber and pulpwood

**Reforestation activities[5] -- Projected Outputs**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Planting | ac | 1,100 | 260 | 1,090 | 1,140 | 1,100 | 1,180 | 1,050 | 1,130 | 1,140 |
| Underplanting | ac | not listed | 0 | 2300 | 100 | 100 | 100 | 600 | 100 | 100 |
| Site Preparation for Natural Regeneration--Chainsaw | ac | 56,000 | 42,800 | 35,000 | 33,500 | 32,500 | 32,900 | 33,600 | 32,80 | 33,100 |
| Site Preparation for Natural Regeneration--scarify/burn | ac | 8,200 | 14,300 | 8,600 | 2,600 | 2,700 | 5,000 | 7,600 | 3,900 | 3,300 |
| Release seedlings from veg. competition | ac | 17,200 | 3,500 | 13,000 | 11,400 | 11,100 | 11,900 | 11,100 | 11,300 | 11,300 |
| Pruning | ac | not listed | 0 | 2300 | 100 | 100 | 100 | 600 | 100 | 100 |
| Seedling Protection | ac | not listed | 0 | 2300 | 100 | 100 | 100 | 600 | 100 | 100 |

[5]Existing Condition Figures from 1996 End of Decade Monitoring Report

**Fire Management**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Communities at Risk: % with Reduced Hazard | % | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

## Table 2-21. Outcomes or Activity Measures and Trends for the Selected Alternative for Decade 1- Full Implementation Budget Level, and Decade 1-Experienced Budget Level[1].

[1]The 'Experienced Budget Level' represents a continuation of current funding levels. The 'Full Implementation Budget Level' represents a forest budget level that provides full implementation of first decade outputs.

| Outcome or Activity Measure | Units | Selected Alternative |
|---|---|---|
| **GOAL 1: Ensure Healthy and Sustainable Ecosystems** | | |
| **Population Trends for Bald Eagle** | description | |
| • Decade 1 - Desired condition or full implementation budget level | | up |
| • Decade 1 – Experienced budget level | | up |
| **Population Trends for Gray Wolf** | description | |
| • Decade 1 - Desired condition or full implementation budget level | | up |
| • Decade 1 – Experienced budget level | | up |
| **Population Trends for Fassett's Locoweed** | description | |
| • Decade 1 – Desired condition or full implementation | | stable |
| • Decade 1 – Experienced budget level | | stable |
| **Species of concern** | | |
| Population Trends | description | |
| • Decade 1 – Desired condition or full implementation | | up or stable |
| • Decade 1 – Experienced budget level | | up or stable |
| Plant occurrences within RNA, CRNA, and SMA areas | % | |
| • Decade 1 – Desired condition or full implementation | | 42 |
| • Decade 1 – Experienced budget level | | 42 |
| **Health of Aquatic Systems --** | | |
| Aquatic Ecological Classification of stream segments | % | |
| • Decade 1 – Desired Condition or full implementation | | 100% |
| • Decade 1 – Experienced budget level | | 100% |
| Aquatic Ecological Classification of stream reaches | % | |
| • Decade 1 – Desired Condition or full implementation | | 20% |
| • Decade 1 – Experienced budget level | | 10% |
| Bathymetric Mapping of lakes larger than 10 acres | ea | |
| • Decade 1 – Desired Condition or full implementation | | 80 |
| • Decade 1 – Experienced budget level | | 20 |
| Reduction or Mitigation of road and motorized trail stream crossings | ea | |
| • Decade 1 – Desired Condition or full implementation | | 100 |
| • Decade 1 – Experienced budget level | | 50 |
| Relocation of roads and ATV/Dual Use trails out of Riparian zones or Wetlands where feasible | mi | |
| • Decade 1 – Desired Condition or full implementation | | 10 |
| • Decade 1 – Experienced budget level | | 3 |
| Improve Stream Habitat—Examples: Adding structure, maintain free flow | mi | |
| • Decade 1 – Desired Condition or full implementation | | 2000 |
| • Decade 1 – Experienced budget level | | 1430 |
| Improve Lake Habitat—Examples: Adding structure, aeration, | ac | |
| • Decade 1 – Desired Condition or full implementation | | 12000 |
| • Decade 1 – Experienced budget level | | 1430 |
| **Conserve Terrestrial Ecosystems --** | | |
| Manage Terrestrial Habitat. This could be accomplished through activities such as prescribed burning in MA 8C, waterfowl mgmt or other smaller projects. | ac | |

| Outcome or Activity Measure | Units | Selected Alternative |
|---|---|---|
| • Decade 1 – Desired Condition or full implementation | | 11,000 |
| • Decade 1 – Experienced budget level | | 6,300 |
| Identify Blocks of MA 4B for restoration. Use prescribed burning to restore desired understory. | ac | |
| • Decade 1 – Desired Condition or full implementation | | 1,800 |
| • Decade 1 – Experienced budget level | | 750 |
| Identify Large contiguous Northern Hardwood blocks within MA's 2A and 2B for management of Interior Forest . (acres of MA 2A +2B) | ac | |
| • Decade 1 – Desired Condition or full implementation | | 471,000 |
| • Decade 1 – Experienced budget level | | 471,000 |
| Designated Old Growth | ac | |
| • Decade 1 – Desired Condition or full implementation | | 85,500 |
| • Decade 1 – Experienced budget level | | 85,500 |
| Designated Special Mgmt Areas and RNA's, and Candidate RNA's. | ac | |
| • Decade 1 – Desired Condition or full implementation | | 99,000 |
| • Decade 1 – Experienced budget level | | 99,000 |
| Projected acres of early successional species that convert either naturally or through management activity toward later successional Forest types | ac | |
| • Decade 1 – Desired Condition or full implementation | | 10,000 |
| • Decade 1 – Experienced budget level | | 5,000 |
| Forestwide Fisheries and Threatened/Endangered/Sensitive plant and animals species Inventories, and other wildlife inventories | ac | |
| • Decade 1 – Desired Condition or full implementation | | 400,000 |
| • Decade 1 – Experienced budget level | | 140,000 |
| Non-native Invasive Plant Species Inventory | ac | |
| • Decade 1 – Desired Condition or full implementation | | 250,000 |
| • Decade 1 – Experienced budget level | | 100,000 |
| Treatment of Non-native Invasive Plant Species | ac | |
| • Decade 1 – Desired Condition or full implementation | | 2700 |
| • Decade 1 – Experienced budget level | | 950 |
| Trend for Northern Hardwood average patch size | description | |
| • Decade 1 – Desired Condition or full implementation | | up |
| • Decade 1 – Experienced budget level | | up |
| **Goal 2: Provide Multiple Benefits for People** | | |
| **Recreation Opportunities** | | |
| Area of Designated SPNM provided | ac | |
| • Decade 1 – Desired Condition or full implementation | | 68,200 |
| • Decade 1 – Experienced budget level | | 68,200 |
| Area of Designated SPNM provided with timber harvest as an exception (MA 6A) | ac | |
| • Decade 1 – Desired Condition or full implementation | | 20,100 |
| • Decade 1 – Experienced budget level | | 20,100 |
| Area of Designated SPNM with limited timber harvest (MA 6B) | ac | |
| • Decade 1 – Desired Condition or full implementation | | 48,100 |
| • Decade 1 – Experienced budget level | | 48,100 |
| Non-motorized area with full vegetation Mgmt. | ac | |
| • Decade 1 – Desired Condition or full implementation | | 42,500 |
| • Decade 1 – Experienced budget level | | 42,500 |
| Wilderness and Wilderness Study Area provided | ac | |
| • Decade 1 – Desired Condition or full implementation | | 59,500 |
| • Decade 1 – Experienced budget level | | 59,500 |
| Developed Site Operation | People at one time days operated to standard | |
| • Decade 1 – Desired Condition or full implementation | | 26,110 |
| • Decade 1 – Experienced budget level | | 14,000 |

| Outcome or Activity Measure | Units | Selected Alternative |
|---|---|---|
| Total ATV Trails | miles | |
| • Decade 1 – Desired Condition or full implementation | | 469 |
| • Decade 1 – Experienced budget level | | 469 |
| New ATV Trails | miles | |
| • Decade 1 – Desired Condition or full implementation | | 185 |
| • Decade 1 – Experienced budget level | | 185 |
| **Forest Commodities** | | |
| Allowable Sale Quantity | MMBF | |
| • Decade 1 – Desired Condition or full implementation | | 1310 |
| • Decade 1 – Experienced budget level | | 940 |
| Allowable Sale Quantity | MMCF | |
| • Decade 1 – Desired Condition or full implementation | | 226 |
| • Decade 1 – Experienced budget level | | 212 |
| Hardwood Sawtimber | MMBF | |
| • Decade 1 – Desired Condition or full implementation | | 76 |
| • Decade 1 – Experienced budget level | | 55 |
| Hardwood Pulpwood | MMBF | |
| • Decade 1 – Desired Condition or full implementation | | 532 |
| • Decade 1 – Experienced budget level | | 382 |
| Conifer Sawtimber | MMBF | |
| • Decade 1 – Desired Condition or full implementation | | 88 |
| • Decade 1 – Experienced budget level | | 63 |
| Conifer Pulpwood | MMBF | |
| • Decade 1 – Desired Condition or full implementation | | 299 |
| • Decade 1 – Experienced budget level | | 214 |
| Aspen Pulpwood | MMBF | |
| • Decade 1 – Desired Condition or full implementation | | 313 |
| • Decade 1 – Experienced budget level | | 225 |
| **Reforestation activities-- Decade 1** | | |
| Planting/Underplanting | ac | |
| • Decade 1 – Desired Condition or full implementation | | 16,000 |
| • Decade 1 – Experienced budget level | | 7,600 |
| Site Preparation for Natural Regeneration--Chainsaw | ac | |
| • Decade 1 – Desired Condition or full implementation | | 34,100 |
| • Decade 1 – Experienced budget level | | 15,000 |
| Site Preparation for Natural Regeneration--scarify/burn | ac | |
| • Decade 1 – Desired Condition or full implementation | | 6,400 |
| • Decade 1 – Experienced budget level | | 6,400 |
| Release seedlings from veg. competition | ac | |
| • Decade 1 – Desired Condition or full implementation | | 12,500 |
| • Decade 1 – Experienced budget level | | 4,600 |
| Pruning | ac | |
| • Decade 1 – Desired Condition or full implementation | | 2,000 |
| • Decade 1 – Experienced budget level | | 1,100 |
| Seedling Protection | ac | |
| • Decade 1 – Desired Condition or full implementation | | 2,000 |
| • Decade 1 – Experienced budget level | | 2,000 |
| **Fire Management** | | |
| Communities at Risk: % with Reduced Hazard | % | |
| • Decade 1 – Desired Condition or full implementation | | 10 |
| • Decade 1 – Experienced budget level | | 10 |

**Table 2-22. Total Budget Costs for the Selected Alternative for Decade 1: Desired Condition and Experienced Budget Level by Program (in Thousands of Dollars)**

| Program and Components | Budget Level Desired Condition Decade 1 | Experienced Budget Level Decade 1 |
|---|---|---|
| Wildlife, Fish, and Rare Plants | | |
| • Interpretation and Education | 600 | 240 |
| • Manage Lake Habitat | 4120 | 1900 |
| • Manage Stream Habitat | 3020 | 1460 |
| • Manage Terrestrial Habitat | 10190 | 3440 |
| • Cost Pool | 1650 | 1650 |
| Vegetation and Watershed | | |
| • Maintain and Improve Watershed Conditions | 3000 | 1810 |
| • Improve Forestland Vegetation (includes KV funding) | 21500 | 12120 |
| • Treat NNIS | 1080 | 230 |
| • Manage Air Quality | 600 | 100 |
| • Environmental Compliance and Protection (Land fill Monitoring) | 2950 | 190 |
| • Cost Pool | 2010 | 2010 |
| Inventory and Monitoring | | |
| • Assessments | 3500 | 1000 |
| • Integrated Inventories | 3780 | 2680 |
| • Forest Plan Monitoring | 4620 | 2450 |
| • GIS Resource Mapping | 3000 | 2080 |
| • Cost Pool | 1650 | 1650 |
| Recreation Management | | |
| • Operate Developed Sites | 15570 | 8400 |
| • Manage General Forest Areas | 3700 | 1460 |
| • Interpretation and Education | 6000 | 3250 |
| • Administer Recreation Special Uses | 1250 | 650 |
| • Manage Wilderness | 5000 | 1630 |
| • Manage Heritage Resources | 2100 | 1140 |
| • Cost Pool | 4640 | 4640 |
| Trails | | |
| • Maintain Trails | 3910 | 1040 |
| • Improve Trails—Small Projects | 1600 | 700 |
| • Improve Trails – Large Projects | 1850 | 1850 |
| • Cost Pool | 930 | 930 |
| Forest Products | | |
| • Plan Timber Sales | 32000 | 21010 |
| • Prepare Timber Sales | 35500 | 21000 |
| • Administer Timber Sale Contracts | 12000 | 7500 |
| • Manage Special Forest Products | 1200 | 500 |
| • Cost Pool | 14170 | 14170 |
| Hazardous Fuel Management | | |
| • Mitigate Hazardous Fuels: Wildland/Urban | 2280 | 1500 |
| • Mitigate Hazardous Fuels: Non-Wildland/Urban | 970 | 650 |
| • Cost Pool | 520 | 520 |
| Land Management Planning | | |

| Program and Components | Budget Level Desired Condition Decade 1 | Experienced Budget Level Decade 1 |
|---|---|---|
| • Maintain Land Management Plans—Amendments as necessary | 3570 | 2390 |
| • Cost Pool | 1370 | 1370 |
| Minerals and Geology | | |
| • Administer Minerals Operations | 980 | 500 |
| • Process Mineral Operation Applications | 1970 | 1000 |
| • Provide Geologic Services | 980 | 500 |
| • Cost Pool | 490 | 490 |
| Land Management | | |
| • Adjust Land Ownership | 1120 | 420 |
| • Administer Land Use Authorizations | 1410 | 520 |
| • Process Land Use Proposals | 1880 | 690 |
| • Protect Land Ownership Title | 470 | 170 |
| • Survey Boundary Lines | 450 | 1670 |
| • Cost Pool | 1370 | 1370 |
| Facilities | | |
| • Maintain Facilities | 16000 | 7890 |
| • Cost Pool | 2300 | 2300 |
| Roads | | |
| • Maintain Passenger Car Roads (ML 3 – 5) | 23370 | 10100 |
| • Maintain High Clearance and Back Country Roads (ML 1 – 2) | 1720 | 1270 |
| • Decommission Roads | 680 | 500 |
| • Improve Transportation System– Small Projects | 19560 | 1430 |
| • Improve Transportation System – Large Projects (>$250,000 ea) | 3000 | 1500 |
| • Cost Pool | 467 | 467 |
| Totals | $295,617 | $164,097 |