

# Chapter 2 – The Alternatives

## Table of Contents

<b>INTRODUCTION .....</b>	<b>2-1</b>
<b>DEVELOPING ALTERNATIVES.....</b>	<b>2-1</b>
<b>ELEMENTS COMMON TO ALL ALTERNATIVES .....</b>	<b>2-2</b>
LAWS, REGULATIONS AND POLICIES .....	2-2
WILD AND SCENIC RIVERS .....	2-2
MANAGEMENT INDICATOR SPECIES .....	2-2
WILDERNESS .....	2-2
RESEARCH NATURAL AREAS.....	2-3
MANAGEMENT AREAS.....	2-3
<b>ALTERNATIVES CONSIDERED IN DETAIL.....</b>	<b>2-6</b>
ALTERNATIVE 1 .....	2-6
ALTERNATIVE 2.....	2-8
ALTERNATIVE 3-MODIFIED .....	2-10
ALTERNATIVE 4.....	2-12
<b>ALTERNATIVE COMPARISON TABLE.....</b>	<b>2-15</b>
<b>ALTERNATIVES ELIMINATED FROM DETAILED STUDY .....</b>	<b>2-20</b>
NO HARVEST ALTERNATIVE.....	2-20
WILDERNESS ALTERNATIVE.....	2-20
NATIONAL RECREATIONAL AREA PROPOSAL .....	2-21
NO OHV ALTERNATIVE .....	2-21
ASPEN ALTERNATIVE .....	2-21

## List of Tables

TABLE 2-1. MANAGEMENT AREA DESCRIPTIONS .....	2-4
TABLE 2-2. ALTERNATIVE 1 PROPOSED MA ALLOCATIONS .....	2-7
TABLE 2-3. ALTERNATIVE 2 PROPOSED MA ALLOCATIONS .....	2-9
TABLE 2-4. ALTERNATIVE 3-MODIFIED PROPOSED MA ALLOCATIONS .....	2-11
TABLE 2-5. ALTERNATIVE 4 PROPOSED MA ALLOCATIONS .....	2-13
TABLE 2-6. ALTERNATIVE COMPARISON: ESTIMATED LONG-TERM GOALS, VEGETATION MANAGEMENT .....	2-15
TABLE 2-7. ALTERNATIVE COMPARISONS, MANAGEMENT AREA DISTRIBUTION (NFS ACRES) <sup>1</sup> .....	2-16
TABLE 2-8. ALTERNATIVE COMPARISONS: OHV MANAGEMENT, ESTIMATED DESIRED CONDITION OF TRAILS AND ROUTES.....	2-17
TABLE 2-9. ALTERNATIVE COMPARISONS, SECONDARY ISSUES.....	2-18
TABLE 2-10. ALTERNATIVE COMPARISONS, SECONDARY ISSUES (CONTINUED).....	2-19
TABLE 2-11. SUITABILITY ANALYSIS FOR ASPEN/PAPER BIRCH.....	2-22



---

## Chapter 2 – The Alternatives

---

### Introduction

---

The National Forest Management Act (NFMA) requires that a broad range of reasonable alternatives be developed and analyzed during the planning process. This chapter of the FEIS explores the differences among management alternatives for the Ottawa National Forest (the Ottawa).

There are four proposed alternatives fully analyzed in this FEIS along with five alternatives eliminated from detailed study. Each alternative has a different approach to managing the Ottawa's resources for the next 10 to 15 years. Each of these alternatives is a potential Land and Resource Management Plan for the Ottawa that can be implemented if selected.

This chapter will:

- Explain how the alternatives were developed;
- Describe each alternative;
- Compare the alternatives; and
- Discuss alternatives that were considered but removed from detailed study.

---

### Developing Alternatives

---

In 2003, the Ottawa issued a Notice of Intent (NOI) to revise the 1986 Forest Plan. The NOI notified the public of the beginning of the formal revision process and described the preliminary revision topics for consideration. The Ottawa solicited comments and suggestions from the public on the preliminary revision topics and potential alternatives for addressing those topics. These public comments helped frame the principal and secondary issues discussed in the previous chapter.

Section 102(e) of the National Environmental Protection Act (NEPA) states, that all federal agencies shall “study, develop, and describe appropriate alternatives to recommend courses of actions in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” The Ottawa used an interdisciplinary approach when developing the alternatives. Each alternative was designed to respond to the comments and by providing different emphasis areas for applying 2006 Forest Plan management area direction. The complexity of the alternatives is based upon number of issues addressed and concerns raised during the commenting periods. All alternatives adhere to the concepts of multiple-use and ecosystem management.

---

## Elements Common to All Alternatives

---

Four alternatives were studied in detail. They have a number of things in common, including the following factors.

### ***Laws, Regulations and Policies***

All alternatives were designed to comply with applicable laws, regulations, and policies. All the alternatives:

- Meet the minimum management requirements of the National Forest Management Act of 1976. These requirements guide the development, analysis, approval, implementation, monitoring, and evaluation of Forest Plans, including:
  - Resource protection
  - Vegetative manipulations
  - Silvicultural practices
  - Even-aged management
  - Riparian areas
  - Soil and water protection
  - Viability and diversity of species
- Recognize the unique status of Native American tribes and their rights retained by trust and treaty with the United States, including consultation requirements.
- All alternatives meet minimum health and safety standards.

### ***Wild and Scenic Rivers***

All alternatives would manage the Congressionally-designated and study rivers in a manner that would protect their free flow, water quality, outstandingly remarkable values, and classification.

### ***Management Indicator Species***

Management Indicator Species (MIS) were reviewed during the Forest Plan revision process. Based on recommendations from Forest specialists, the number of MIS proposed during Forest Plan revision will be fewer than the 1986 Forest Plan. The Ottawa proposes to monitor the following species as MIS: ruffed grouse, American marten, cutleaf toothwort, and the mayfly/stonefly/caddisfly monitoring index.

### ***Wilderness***

The Ottawa currently has three Congressionally-designated wildernesses (Sylvania, McCormick, and Sturgeon River Gorge).

Forest Service planning regulations require that during Forest Plan revision, the roadless character of National Forest System (NFS) land be inventoried. The entire Forest ownership was reviewed during the Roadless inventory process during Forest Plan revision following FSH 1909.12 direction and the Eastern Region Guidelines for Completing Roadless Area Inventories

during Forest Plan Revision (USDA Forest Service 1997b). Included in the inventory were the Trap Hills area and the Norwich Inventoried Roadless area. The inventory process identified one area, known as Ehlco, to be carried forward to the wilderness evaluation process. This process is described in Appendix B of this document.

An interdisciplinary team evaluated the Ehlco area for potential wilderness characteristics as outlined in FSH 1909.12, Chapter 7; FSM 1920, Section 1923; and the Eastern Region Guidelines for Completing Roadless Area Inventories during Forest Plan Revision (USDA Forest Service 1997b). The final wilderness evaluation of the Ehlco area is documented in Appendix C of this document. The analysis conducted did not reveal compelling features, conditions or demands to warrant its consideration for wilderness study by Congress. As a result, no areas on the Ottawa are being proposed for wilderness study or designation.

### **Research Natural Areas**

Research natural areas (RNAs) are examples of important forest, shrubland, grassland, alpine, aquatic, and geologic types that have special or unique characteristics to complete the national network of RNAs. The Ottawa currently has one designated RNA and two candidate RNAs.

In all alternatives, the Ottawa proposes to continue to carry the Sturgeon River Gorge as a candidate RNA, to remove the Sylvania candidate RNA from consideration, and retain the existing McCormick RNA. Establishment of the Sturgeon River Gorge candidate RNA is not proposed concurrent with Forest Plan revision. The Forest Service Research branch will need to determine the priority of this candidate for establishment into the RNA system.

### **Management Areas**

The 2006 Forest Plan divides the Ottawa into different management areas (MAs). Different MAs emphasize different natural resource attributes and social/economic values.

A list of MAs was developed for the Ottawa; each alternative has a different mix of MAs, or management direction. Management areas are also applied to different spatial areas in the different alternatives.

Some MA direction of the 1986 Forest Plan has not been carried forward in all alternatives (see footnote following Table 2-1). Some MA boundaries have been altered depending on an alternative's emphasis. The MA direction from the 1986 Forest Plan has not changed substantially between alternatives in the following areas:

- Wilderness (MAs 5.1, 5.2, and 5.3)
- Semi-primitive motorized and non-motorized areas (MAs 6.1 and 6.2)
- Black River Recreation Area (MA 7.1)
- Wild and Scenic River Designated and Study Rivers (MA 8.1 and MA 9.2)
- Sylvania Perimeter Area and the McCormick Entrance Area (MA 8.2)

The following is a brief description of each MA. Each MA has a different mix of resource uses. The descriptions here only highlight the predominant use in the MA and list the multiple uses of each MA. The emphasis in each area is not an exclusive use. A detailed description and desired condition for each MA can be found in Chapter 3 of the 2006 Forest Plan.

**Table 2-1. Management Area Descriptions**

<b>Management Area</b>	<b>Brief Description</b>
<b>MA 1.1</b>	Emphasizes early successional ecosystem community types (plant and animal) in a roaded natural motorized recreation environment.*
<b>MA 1.1a</b>	Similar to MA 1.1, but with greater emphasis on aspen forest type.
<b>MA 2.1</b>	Emphasizes northern hardwoods (50-70% desired vegetative composition) ecosystem using uneven-aged management to produce quality hardwood timber products and associated wildlife in a roaded natural motorized recreation environment.
<b>MA 2.2</b>	Emphasizes late successional northern hardwood (65-75% desired vegetative composition) forest types within a roaded natural motorized recreation environment. Provides an appearance that is predominantly forested (few openings) with a greater emphasis on uneven-aged hardwood management than in MA 2.1.
<b>MA 3.1</b>	Emphasizes a mix of northern hardwoods, softwoods, and aspen vegetative types in a roaded natural motorized recreation environment through even-aged management.*
<b>MA 3.1a</b>	Similar to 3.1, but equal emphasis on hardwood and aspen forest types. Similar amounts of long and short-lived conifers and smaller objectives for permanent openings.
<b>MA 3.2</b>	Emphasizes a wide variety of vegetative conditions including moderate amounts of early, middle and late successional community types, all within a roaded natural motorized recreation environment. Provides a forest scene with occasional temporary openings mixed with stands of larger and older trees.*
<b>MA 4.1</b>	Emphasizes long-lived conifers and associated wildlife habitat in a roaded natural motorized recreation environment through even-aged management.*
<b>MA 4.1a</b>	Similar to 4.1, provides for a mix of aspen, northern hardwoods, and conifer types with emphasis on long-lived conifers. Larger objective for permanent openings.
<b>MA 4.2</b>	Emphasizes short-lived conifers while maintaining habitat for associated wildlife in a roaded natural motorized recreation environment through even-aged management.*
<b>MA 4.2a</b>	Similar to 4.2, but with a greater provision for permanent openings.
<b>MA 5.1</b>	McCormick Wilderness: The desired condition for this area features a remote, undisturbed wilderness in a secluded setting with a semi-primitive non-motorized recreational environment. Visitors to this area will find rolling hills, rocky outcrops, lakes, islands, marshes, bogs, wetlands, and quiet secluded forests.

<b>Management Area</b>	<b>Brief Description</b>
<b>MA 5.2</b>	Sturgeon River Gorge Wilderness: The desired condition for this area features a remote, undisturbed wilderness in a secluded setting with a semi-primitive non-motorized recreational environment. Visitors to this area will find rocky outcrops and steep terrain along the gorge, rivers, marshes, wetlands, and quiet secluded forests.
<b>MA 5.3</b>	Sylvania Wilderness: The desired condition for this area features a remote, undisturbed wilderness in a secluded setting with a semi-primitive non-motorized recreational environment. Visitors to this area will find rolling hills, lakes, rivers, marshes, bogs, wetlands, and quiet secluded old growth forests.
<b>MA 6.1</b>	Emphasizes a semi-primitive non-motorized recreation environment in a northern hardwoods ecosystem with moderate harvesting of other vegetative types through uneven-aged management. Provides habitat for wildlife requiring remoteness. Most roads would be closed.
<b>MA 6.2</b>	Emphasizes a semi-primitive motorized recreation environment. Maintains high amounts of northern hardwoods, with some aspen. Emphasizes uneven-aged management for northern hardwoods. Even-aged management of aspen provides habitat conditions for game species.
<b>MA 7.1</b>	Provides for a high-density self-contained roaded natural recreational environment in the management of the Black River Recreation Area.
<b>MA 8.1</b>	River corridors in this MA will be managed to protect and enhance the values for which the river was designated. This strategy will enable the river corridors involved to retain the outstandingly remarkable resource values for which they were designated under the Wild and Scenic Rivers Act (WSRA).
<b>MA 8.2</b>	Provides for management of the Sylvania Perimeter Area and the McCormick Entrance Area; primarily in a roaded natural recreational environment.
<b>MA 8.3</b>	Identifies special interest areas (SIAs) across the Ottawa. SIAs are managed to highlight and protect unique features; land management and recreational uses continue with interpretive opportunities emphasized.
<b>MA 9.2</b>	Emphasize land and resource conditions that would provide for the interim protection and management of study river corridors on NFS lands administered by the Ottawa. This would enable the retention of the existing condition of these individual river corridors until studies can be completed to determine whether a recommendation for a Wild and Scenic River Act designation should be made.
<b>MA 9.3</b>	Provides for minimum management requiring protection and maintenance of environmental values and the health and safety of the public.

\* Denotes a management area only analyzed in Alternative 1.

---

## Alternatives Considered in Detail

---

The Ottawa developed four alternatives for detailed study. Each alternative stands alone as a potential Forest Plan. Although each of the alternatives has many things in common, they differ in the emphasis given to particular issues. Alternatives address NFS lands only and are not applied to other lands within the Ottawa boundary.

### ***Alternative 1***

This alternative is the “no action” alternative. NEPA requires that the Forest Service consider this alternative in detail when completing environmental impact statements. No action means that the management direction and management area allocations from the 1986 Forest Plan would be applied through the next Plan period.

Some adjustments to bring direction from the 1986 Forest Plan into compliance with existing laws and current agency guidelines and “modernize” the alternative would be made. Those adjustments include: removing hemlock and cedar forest types from the suitable timber base; including the same recommended MIS list (as shown in Alternatives 2 through 4); and removing the Sylvania candidate RNA from further consideration and carrying the Sturgeon River Gorge as candidate RNA until establishment can be completed. In addition, based on the suitability analysis that was completed (refer to Appendix A of this document), the number of acres allocated to the aspen forest type on the Ottawa was reduced. The aspen acreage goal from the 1986 Forest Plan was carried forward as an Alternative Considered but Eliminated from Detailed Study (refer to the end of this chapter for more information). Finally, the allowable sale quantity was also “modernized” as a result of the suitability analysis completed as part of Forest Plan revision (see Appendix A of this document for more detail).

**Table 2-2. Alternative 1 Proposed MA Allocations**

<b>Management Area</b>	<b>NFS Acres<sup>1</sup></b>
MA 1.1	82,600
MA 2.1	376,100
MA 3.1	61,500
MA 3.2	141,600
MA 4.1	62,400
MA 4.2	15,100
MA 5.1 <sup>2</sup>	16,850
MA 5.2 <sup>2</sup>	14,500
MA 5.3 <sup>3</sup>	18,400
MA 6.1	64,600
MA 6.2	52,900
MA 7.1	1,100
MA 8.1	67,000
MA 8.2	2,500
MA 9.2	8,900
MA 9.3	7,100

<sup>1</sup>Acreages are for NFS lands, except for MAs 5.1, 5.2 and 5.3 which include all acres within the wilderness boundaries.

<sup>2</sup>Acres as cited in the 1987 Michigan Wilderness Act.

<sup>3</sup>Total Acres that fall within the boundary of the Sylvania Wilderness as approved by the Regional Forester on June 16, 2005 (USDA Forest Service 2005p).

**Desired Conditions:** This alternative proposes to move the Ottawa toward the desired conditions and overall management themes of the 1986 Forest Plan. Specific levels of resource management treatments or yields have been adjusted to reflect the changes in Ottawa conditions since 1986. Alternative 1 would maintain or improve the habitat for a wide variety of game and non-game species, provide diverse recreation opportunities, and a mix of forest timber products.

Much of the Ottawa would remain open to OHV use, including cross-country travel. Some changes may be made to standards and guidelines and other direction to make them consistent with current laws and regulations.

**OHV Management:** Cross-country OHV use is allowed on the Ottawa unless posted closed or is a special area (e.g., semi-primitive non-motorized area or wilderness). The majority of objective maintenance levels (OMLs) 1 and 2 roads are open to use.

**Hardwood Management:** Management of hardwoods has been with a mixture of uneven-aged and even-aged practices to provide a variety of northern hardwood vegetative communities (e.g., species, size, structure, and age class) that produce a full range of wildlife and recreation benefits and a variety of timber products. Uneven-aged management has been emphasized Forestwide.

The desired condition for management of northern hardwoods in this alternative would result in a 60% to 40% ratio of uneven-aged versus even-aged forest management.

**Aspen/Paper Birch Management:** Aspen/paper birch provides most of the Ottawa's early successional component. It plays an important role in contributing to upland areas and big game habitats. Aspen also contributes to habitat needs of some native species, as well as the demands of some area forest products businesses. This alternative maintains the greatest aspen acreage of the four alternatives.

**Long-lived Conifer Management:** The Ottawa has a component of long-lived conifers, such as red pine and white pine that provide diversity for a variety of plant and animal species.

**Short-lived Conifer Management:** Short-lived conifer species, such as jack pine and balsam fir provide diversity for a variety of native plant and animal communities.

**Allowable Sale Quantity (ASQ):** The average annual ASQ is estimated to be 95.6 million board feet during the first decade of implementation of the 2006 Forest Plan and 107.0 million board feet during the second decade.

## **Alternative 2**

**Desired Conditions:** The Ottawa is managed as a core part of the largest contiguous block of northern hardwoods in the Lake States area. Vegetation goals address many forest conditions, but emphasize late successional forest conditions, with older and larger trees, and more interior forest conditions. Early successional forests exist in moderate amounts.

Vegetation management would replicate disturbance factors typical of ecosystems of the western Upper Peninsula. These factors include individual or small scale tree blowdown and replacement along with relatively infrequent whole stand replacing wind events. Hardwood selection harvest replicates these small windfalls by creating small gaps in the canopy. Aspen acreage is closer to the ecological capability of the Ottawa's wind, fire, and disease conditions. Access for OHVs would be on a modest system of designated trails and road routes.

**OHV Management:** OHV access would occur on a designated trail system that would include limited use on roads. No cross-country use by OHVs would be allowed on the Ottawa. The primary focus would be designating new north-south connector routes, primarily for ATV use, between the established State of Michigan east/west trails multi-use trails.

**Table 2-3. Alternative 2 Proposed MA Allocations**

<b>Management Area</b>	<b>NFS Acres<sup>1</sup></b>
MA 1.1a	53,300
MA 2.1	170,900
MA 2.2	285,500
MA 3.1a	79,900
MA 4.1a	145,100
MA 4.2a	6,000
MA 5.1 <sup>2</sup>	16,850
MA 5.2 <sup>2</sup>	14,500
MA 5.3 <sup>3</sup>	18,400
MA 6.1	57,000
MA 6.2	52,400
MA 7.1	1,100
MA 8.1	67,000
MA 8.2	2,600
MA 8.3	10,600
MA 9.2	8,900
MA 9.3	3,200

<sup>1</sup>Acres are for NFS lands, except for MAs 5.1, 5.2 and 5.3 which include all acres within the wilderness boundaries.

<sup>2</sup>Acres as cited in the 1987 Michigan Wilderness Act.

<sup>3</sup>Total Acres that fall within the boundary of the Sylvania Wilderness as approved by the Regional Forester on June 16, 2005 (USDA Forest Service 2005p).

**Hardwood Management:** The northern hardwood forest would be managed to accelerate its return to a more resilient, complex, and mature forest. New MA prescriptions, standards and guidelines would be implemented to better match management methods of northern hardwoods and other vegetative components with ecological capabilities. Emphasis on uneven-aged hardwoods would result in more acres managed for hardwood. Alternative 2 would have the highest hardwood acreage.

**Aspen/Paper Birch Management:** This alternative would provide the lowest aspen acreage. A level of aspen and early successional habitat needed to address species viability, habitat for wildlife species, and social needs would be maintained. Some of the aspen acres would continue to convert to northern hardwoods through natural processes.

**Long-lived Conifer Management:** Long-lived conifers would be maintained or increased without reduced total acres of short-lived species, such as jack pine. This alternative would have the greatest acreage of management for long-lived conifers.

**Short-lived Conifer Management:** Short-lived conifers would be maintained or increased without reducing long-lived conifers. Opportunities to cooperate with adjacent landowners to

provide for Kirtland's warbler habitat would be sought. This alternative would have an increased emphasis on favoring aspen in areas of aspen/balsam fir mix stands.

**Allowable Sale Quantity (ASQ):** The average annual ASQ is estimated to be 92.6 million board feet during the first decade of implementation of the 2006 Forest Plan and 121.0 million board feet during the second decade.

#### **Changes Related to Secondary Issues:**

- Old Growth. Maintaining long-lived tree species within stands adjacent to classified old growth would be emphasized.
- Permanent Forest Openings (PFOs). Small percentages of MAs in 2.1, 4.2a, 6.1, and 6.2 would be managed as PFOs. Minor components of PFOs would occur in MA 1.1a, 2.2 and 3.1a. Greater component of PFOs in MA 4.1a (conifer emphasis).
- Non-Native Invasive Species. Treat non-native invasive species infestations and maintain list of species of concern. Treatment would be based on prioritization. Inventories would be conducted and public education provided.
- Canada Lynx. Provide threshold amount of dispersal habitat for foraging and denning.
- Fire Management. Allow for natural ignitions to burn under the appropriate conditions and use of prescribed fire to meet management objectives.
- Riparian Management. Include standards and guidelines that enhance protections and guide management decisions in riparian areas.
- Management of Dams. Include standards and guidelines that would be considered with projects involving existing dams; additions or removals of dams on forest streams.
- Special Interest Areas (SIAs). New MA for seven SIAs to protect scenic, geologic, botanical, zoological, recreational, or historic values.

### ***Alternative 3-Modified***

Alternative 3 was modified between the Draft and Final EIS. Changes were made to increase clarity, update information, and respond to public concerns. See Chapter 1 of the FEIS for a detailed description of these changes.

**Desired Conditions:** Relative to Alternatives 1 and 4, this alternative emphasizes management of the Ottawa as a core part of the largest contiguous block of northern hardwoods in the Lake States area. Relative to Alternative 2, the modified Alternative 3 would provide a greater diversity of forested types and conditions. Vegetative conditions reflect the capability of the Ottawa to provide variety in tree species composition, timber products, wildlife habitat, and overall species richness. Hardwood, conifer, and aspen forests exist in moderate amounts. Access for OHVs would be considered on designated trails, on designated open roads, and on roads closed to highway vehicle traffic.

**OHV Management:** Access for OHVs would occur on designated trails, on designated open roads, and on roads closed to highway vehicle traffic. Designations would occur on OMLs 1, 2, and 3 roads. This responds to the demand for recreational use and general forest OHV road

access for activities such as hunting and fishing. Priority for designating OML 1, 2 and 3 roads would be considered where conflicts with other user needs and resource protection issues are minimal. No cross-country use by OHVs would be allowed on the Ottawa. This alternative would also include designating new north-south connector routes, primarily for ATV use, between the established State of Michigan east/west trails multi-use trails.

**Hardwood Management:** The northern hardwood forest would be managed to accelerate its return to a more resilient, complex, and mature forest. New management area prescriptions, standards, and guidelines would be implemented to better match management methods of northern hardwoods and other vegetative components with ecological capabilities. This alternative would have less uneven-aged management than Alternative 2, but would have more uneven-aged management than Alternatives 1 and 4.

**Table 2-4. Alternative 3-Modified Proposed MA Allocations**

Management Area	NFS Acres <sup>1</sup>
MA 1.1a	62,200
MA 2.1	285,900
MA 2.2	153,700
MA 3.1a	87,800
MA 4.1a	138,200
MA 4.2a	12,900
MA 5.1 <sup>2</sup>	16,850
MA 5.2 <sup>2</sup>	14,500
MA 5.3 <sup>3</sup>	18,400
MA 6.1	57,000
MA 6.2	52,400
MA 7.1	1,100
MA 8.1	67,000
MA 8.2	2,600
MA 8.3	10,600
MA 9.2	8,900
MA 9.3	3,200

<sup>1</sup>Acres are for NFS lands, except for MAs 5.1, 5.2 and 5.3 which include all acres within the wilderness boundaries.

<sup>2</sup>Acres as cited in the 1987 Michigan Wilderness Act.

<sup>3</sup>Total Acres that fall within the boundary of the Sylvania Wilderness as approved by the Regional Forester on June 16, 2005 (USDA Forest Service 2005p).

**Aspen/Paper Birch Management:** This alternative would contain more aspen than Alternative 2, with some aspen patches in hardwood areas. This moderate emphasis in aspen would result in fewer acres for hardwood management. However, some of the current aspen acres would convert to northern hardwoods.

**Long-lived Conifer Management:** Long-lived conifers would be maintained or increased without reduced total acres of short-lived species, such as jack pine. Alternative 3-Modified would have a slightly reduced emphasis from Alternative 2.

**Short-lived Conifer Management:** Short-lived conifers would be maintained or increased without reducing long-lived conifers. Opportunities to cooperate with adjacent landowners to provide for Kirtland's warbler habitat would be sought. Alternative 3-Modified favors a mid-range of aspen/balsam forest types, which is between that offered under Alternatives 2 and 4.

**Allowable Sale Quantity (ASQ):** The average annual ASQ is estimated to be 90.1 million board feet during the first decade of the implementation of the 2006 Forest Plan and 134.5 million board feet during the second decade.

**Changes Related to Secondary Issues:** Changes for Alternative 3-Modified are consistent with those outlined for Alternative 2.

### **Alternative 4**

**Desired Conditions:** This alternative emphasizes early successional forests and younger tree species composition and structure within a diverse forest setting. It promotes wildlife habitats favorable to many species, such as deer and ruffed grouse. This alternative is similar to vegetative management conditions on the Ottawa over much of the last century. Access for OHVs would occur on designated trails, on designated open roads, and on roads closed to highway vehicle traffic. Designations would occur on OMLs 1, 2, and 3 roads.

**OHV Management:** OHV access would occur on designated trails, on roads open to highway vehicle traffic, and on roads that are closed to highway vehicle traffic (mainly OMLs 1, 2 and 3 roads). Priority for designating OML 1, 2 and 3 roads would be considered where conflicts with other user needs and resource protection issues are minimal. This alternative would also include designating new connector routes, primarily for ATV use, between the established State of Michigan east/west trails multi-use trails. No cross-country use by OHVs would be allowed on the Ottawa.

**Table 2-5. Alternative 4 Proposed MA Allocations**

Management Area	NFS Acres <sup>1</sup>
MA 1.1a	70,900
MA 2.1	420,800
MA 3.1a	97,800
MA 4.1a	123,400
MA 4.2a	27,700
MA 5.1 <sup>2</sup>	16,850
MA 5.2 <sup>2</sup>	14,500
MA 5.3 <sup>3</sup>	18,400
MA 6.1	57,000
MA 6.2	52,400
MA 7.1	1,100
MA 8.1	67,000
MA 8.2	2,600
MA 8.3	10,600
MA 9.2	8,900
MA 9.3	3,200

<sup>1</sup>Acreages are for NFS lands, except for MAs 5.1, 5.2 and 5.3 which include all acres within the wilderness boundaries.

<sup>2</sup>Acreas as cited in the 1987 Michigan Wilderness Act.

<sup>3</sup>Total Acres that fall within the boundary of the Sylvania Wilderness as approved by the Regional Forester on June 16, 2005 (USDA Forest Service 2005p).

**Hardwood Management:** The northern hardwood forest would be managed to accelerate its return to a more resilient, complex and mature forest. New management area prescriptions and standards and guidelines would be developed to better match management methods of northern hardwoods and other vegetative components with ecological capabilities. This alternative would have less hardwood acreage than Alternatives 2 and 3-Modified.

**Aspen/Paper Birch Management:** Aspen would be maintained at levels higher than all other alternatives except Alternative 1. Some of the current aspen acres would convert to northern hardwoods through natural processes.

**Long-lived Conifer Management:** Long-lived conifers would be maintained or increased without reduced total acres of short-lived species, such as jack pine. Acreage for long-lived conifer management in this alternative would be less than Alternative 2, but exceeds Alternative 1.

**Short-lived Conifer Management:** Short-lived conifers would be maintained or increased without reducing long-lived conifers. Opportunities to cooperate with adjacent landowners to provide for Kirtland's warbler habitat would be sought. Alternative 4 provides for an increased emphasis on favoring short-lived conifers in aspen/balsam mixes.

---

**Allowable Sale Quantity (ASQ):** The average annual ASQ is estimated to be 92.6 million board feet during the first decade of implementation of the 2006 Forest Plan and 125.3 million board feet during the second decade.

**Changes Related to Secondary Issues:** Changes for Alternative 4 are consistent with those outlined for Alternative 2.

## Alternative Comparison Table

Table 2-6. Alternative Comparison: Estimated Long-Term Goals, Vegetation Management

Criteria & Indicators	Alternative 1	Alternative 2	Alternative 3-Modified	Alternative 4
<b>Vegetation Management</b>				
<i>Suited Acres allocated to Forest Type</i>	<b>Vegetation Goals</b> Aspen/P Birch: 120,000 ac. Pine <sup>1</sup> : 34,000 ac. Jack Pine: 9,000 ac. Balsam Fir: 6,000 ac.	<b>Vegetation Goals</b> Aspen/P Birch: 92,000 ac. Pine: 53,000 ac. Jack Pine: 8,000 ac. Balsam Fir: 10,000 ac.	<b>Vegetation Goals</b> Aspen/P Birch: 109,000 ac. Pine: 52,000 ac. Jack Pine: 10,000 ac. Balsam Fir: 10,000 ac.	<b>Vegetation Goals</b> Aspen/P Birch: 111,000 ac. Pine: 51,000 ac. Jack Pine: 10,000 ac. Balsam Fir: 10,000 ac.
	<b>Hardwood Management</b> Even-aged: 74,000 ac. Uneven-aged: 130,000 ac Total: 204,000 ac. % Uneven-aged: 64 %	<b>Hardwood Management</b> Even-aged: 40,000 ac. Uneven-aged: 215,000 ac Total: 255,000 ac. % Uneven-aged: 84 %	<b>Hardwood Management</b> Even-aged: 44,000 ac. Uneven-aged: 193,000 ac Total: 237,000 ac. % Uneven-aged: 81 %	<b>Hardwood Management</b> Even-aged: 51,000 ac. Uneven-aged: 163,000 ac Total: 214,000 ac. % Uneven-aged: 76 %
<i>Allowable Sale Quantity</i>	<b>1<sup>st</sup> Decade</b> 95.6 MMBF 15.5 MMCF <b>2<sup>nd</sup> Decade</b> 107.4 MMBF 17.4 MMCF	<b>1<sup>st</sup> Decade</b> 92.6 MMBF 15.0 MMCF <b>2<sup>nd</sup> Decade</b> 121.0 MMBF 19.6 MMCF	<b>1<sup>st</sup> Decade</b> 90.1 MMBF 14.6 MMCF <b>2<sup>nd</sup> Decade</b> 134.5 MMBF 21.8 MMCF	<b>1<sup>st</sup> Decade</b> 92.6 MMBF 15.0 MMCF <b>2<sup>nd</sup> Decade</b> 125.3 MMBF 20.3 MMCF
<i>Total Suitable Forest Land<sup>2</sup></i>	<b>Suited</b> 496,000 ac.	<b>Suited</b> 490,000 ac.	<b>Suited</b> 488,000 ac.	<b>Suited</b> 489,000 ac.

<sup>1</sup>Pine is comprised of red pine, white pine, white spruce and hemlock.

<sup>2</sup>The acres of land suitable for timber production are estimates of forested acreage within each alternative available for and capable of producing timber products on a regulated basis. These acreages are the basis for the economic efficiency analysis and calculations of long-term sustained yield and ASQ. The suitable forest land acres play an important role as forest managers address the variety of social, economic and ecologic resource issues encountered during Forest Plan implementation.

Table 2-7. Alternative Comparisons, Management Area Distribution (NFS Acres) <sup>1</sup>

Management Area	Alternative 1	Alternative 2	Alternative 3-Modified	Alternative 4
MA 1.1	82,600	0	0	0
MA 1.1a	0	53,300	62,200	70,900
MA 2.1	376,100	170,900	285,900	420,800
MA 2.2	0	285,500	153,700	0
MA 3.1	61,500	0	0	0
MA 3.1a	0	79,900	87,800	97,800
MA 3.2	141,600	0	0	0
MA 4.1	62,400	0	0	0
MA 4.1a	0	145,100	138,200	123,400
MA 4.2	15,100	0	0	0
MA 4.2a	0	6,000	12,900	27,700
MA 5.1 <sup>2</sup>	16,850	16,850	16,850	16,850
MA 5.2 <sup>2</sup>	14,500	14,500	14,500	14,500
MA 5.3 <sup>3</sup>	18,400	18,400	18,400	18,400
MA 6.1	64,600	57,000	57,000	57,000
MA 6.2	52,900	52,400	52,400	52,400
MA 7.1	1,100	1,100	1,100	1,100
MA 8.1	67,000	67,000	67,000	67,000
MA 8.2	2,500	2,600	2,600	2,600
MA 8.3	0	10,600	10,600	10,600
MA 9.2	8,900	8,900	8,900	8,900
MA 9.3	7,100	3,200	3,200	3,200

<sup>1</sup>Changes to the MA acreages reflect use of the Forest's administrative boundary; realignment of MA boundaries and/or adjustments in MA acreages; and double counting of acres where MAs overlap (e.g., MAs 5.1, 5.2, 8.1, 8.2 and 8.3). Changes specific to Alternatives 2 through 4 reflect realignment of MA 6.1 and 6.2 for an existing snowmobile trail, the addition of new proposed MAs, and differences due to rounding of acres. Acreages are for NFS lands, except for MAs 5.1, 5.2 and 5.3 which include all acres within the wilderness boundaries.

<sup>2</sup>Acres as cited in the 1987 Michigan Wilderness Act.

<sup>3</sup>Total Acres that fall within the boundary of the Sylvania Wilderness as approved by the Regional Forester on June 16, 2005 (USDA Forest Service 2005p).

**Table 2-8. Alternative Comparisons: OHV Management, Estimated Desired Condition of Trails and Routes**

<b>Criteria &amp; Indicators</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3-Modified</b>	<b>Alternative 4</b>
<b>OHV Management</b>				
<i>Designated Trail System</i>	<b>Designated trail system allowed</b>	<b>Allow 25-75 miles of new trails/ routes primarily for ATV travel</b>  Priority is to connect existing public designated trail systems.	<b>Allow 25-75 miles of new trails/ routes primarily for ATV travel</b>  Priority is to connect existing public designated trail systems.	<b>Allow 25-75 miles of new trails/ routes primarily for ATV travel</b>  Priority is to connect existing public designated trail systems.
<i>Objective Maintenance Level 1 Roads:</i>  Intermittent roads closed to highway vehicle traffic	<b>Open for use<sup>1</sup></b>  2,300 miles of OML 1 road segments	Minimal amount—only to serve as part of a designated connecting trail.	Up to <b>2,300 miles</b> of OML 1 roads would serve as part of a designated system.	Up to <b>2,300 miles</b> of OML 1 roads would serve as part of a designated system.
<i>Objective Maintenance Level 2 Roads:</i>  Road suitable for high clearance vehicles. Road may be open to vehicle traffic or closed to vehicle traffic.	<b>Open for use<sup>1</sup></b>  650 miles of OML 2 road segments	Minimal amount—only to serve as part of a designated connecting trail.	Up to <b>650 miles</b> of OML 2 roads would serve as part of a designated system.	Up to <b>650 miles</b> of OML 2 roads would serve as part of a designated system.
<i>Objective Maintenance Level 3 Roads:</i>  Road that is open and maintained for highway vehicle traffic. May be single or double lane.	<b>Not open for use</b>	Minimal amount—only to serve as part of a designated connecting trail.	Up to <b>420 miles</b> of OML 3 roads would serve as part of a designated system.	Up to <b>420 miles</b> of OML 3 roads would serve as part of a designated system.
<i>Cross-country</i>	<b>Open for use</b>	<b>Not Allowed</b>	<b>Not Allowed</b>	<b>Not Allowed</b>

<sup>1</sup>It should be noted that travel through wetland features is a violation of State law (Michigan Compiled Laws 1994c).

Table 2-9. Alternative Comparisons, Secondary Issues

Criteria & Indicators	Alternative 1	Alternative 2	Alternative 3-Modified	Alternative 4
<b>Secondary Issues</b>				
<i>Old Growth</i>	<ul style="list-style-type: none"> <li>• Uneven-aged management silviculture would be used within stands immediately adjacent to classified old growth.</li> <li>• Percentage of Old Growth forest varies within MAs 1.1 thru 4.2 and 6.1 and 6.2.</li> <li>• Approximately 156,000 acres</li> </ul>	<ul style="list-style-type: none"> <li>• Maintaining long-lived tree species within stands adjacent to classified old growth would be emphasized.</li> <li>• Approximately 164,000 acres</li> <li>• Percentage of Old Growth forest varies within MAs 1.1 thru 4.2 and 6.1 and 6.2.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintaining long-lived tree species within stands adjacent to classified old growth would be emphasized.</li> <li>• Approximately 160,000 acres</li> <li>• Percentage of Old Growth forest varies within MAs 1.1 thru 4.2 and 6.1 and 6.2.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintaining long-lived tree species within stands adjacent to classified old growth would be emphasized.</li> <li>• Approximately 161,000 acres</li> <li>• Percentage of Old Growth forest varies within MAs 1.1 thru 4.2 and 6.1 and 6.2.</li> </ul>
<i>Permanent Forest Openings (PFOs)</i>	Small percentage of MAs 1.1 through 4.1 and 6.1 and 6.2 managed as PFOs. Higher percentage of PFOs in MA 4.2 (short-lived conifer emphasis).	Small percentage of MAs in 2.1, 4.2a, 6.1, and 6.2 would be managed as PFOs. Minor component of PFOs in MA 1.1a, 2.2, and 3.1a . Greater component of PFOs in MA 4.1a (conifer emphasis).		
<i>Non-Native Invasive Species (NNIS)</i>	Emphasis on natural plant re-vegetation and select seeding use of native grasses for seeding. Control of insect and disease agents attacking forest tree species.	<ul style="list-style-type: none"> <li>• Treat non-native invasive species infestations;</li> <li>• Maintain list of species of concern;</li> <li>• Treatment based on prioritization;</li> <li>• Conduct inventories; and</li> <li>• Provide public education.</li> </ul>		
<i>Canada Lynx</i>	Goals for early successional, conifers, reforestation and for providing diversity of habitats.	<ul style="list-style-type: none"> <li>• Maintain approximately 90,000 acres of aspen for foraging habitat</li> <li>• Maintain approximately 10,000 acres of jack pine for foraging habitat</li> <li>• From the unsuited land base maintain at least 91,000 acres of lowland conifer habitat and 34,000 short-lived conifer habitats</li> <li>• Maintain approximately 10,000 acres of spruce/fir-aspen forest type for foraging habitat</li> </ul>		
	Manage the 256,000-acre Remote Habitat Area (RHA) for low open road density			

**Table 2-10. Alternative Comparisons, Secondary Issues (continued)**

<b>Criteria &amp; Indicators</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3-Modified</b>	<b>Alternative 4</b>
<b>Secondary Issues</b>				
<i>Management Indicator Species</i>	<b>4 MIS species proposed:</b> American marten, ruffed grouse, cutleaf toothwort, and Mayfly/Stonefly/Caddisfly monitoring index.			
<i>Fire Management</i>	<b>Emphasize suppression</b> of all fires.	<b>Refine current direction</b> to allow for natural ignitions to burn under appropriate conditions and use of prescribed fire to meet management objectives.		
<i>Research Natural Areas</i>	<b>RNAs</b> - Carry the Sturgeon River Gorge candidate RNA until establishment can be completed. Remove the Sylvania candidate RNA from consideration. Retain existing McCormick RNA.			
<i>Riparian Management</i>	<b>Minimal Plan direction</b>	<b>Include standards and guidelines</b> that enhance protections and guide management decisions in riparian areas.		
<i>Management of Dams</i>	<b>Minimal Plan direction</b>	<b>Include standards and guidelines</b> that would be considered with projects involving existing dams, additions or removals of dams on forest streams.		
<i>Wilderness</i>	<b>No new wilderness recommendations to Congress.</b> <b>Retain three Congressionally-designated wildernesses totaling approximately 50,000 NFS acres.</b>			
<i>Special Interest Areas (SIAs)</i>	<b>NO SIAs</b>	<b>New Management Area (MA 8.3) for seven SIAs</b> to protect scenic, geologic, botanical, zoological, recreational, or historic values.		

---

## **Alternatives Eliminated from Detailed Study**

---

Federal agencies are required by the National Environmental Policy Act to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action discussed in the Notice of Intent provided suggestions for alternative methods for achieving the purpose and need.

Some of these alternatives may have been outside the scope of the proposed changes, duplicative of the alternatives considered in detail, or have components that would cause unnecessary environmental harm. Therefore, a number of alternatives were considered, but dismissed from detailed consideration for reasons summarized below. The following briefly describes alternatives that were not studied in detail and discusses the reasons for their elimination. These alternatives are labeled by their major emphasis.

### ***No Harvest Alternative***

The Ottawa received requests to consider an alternative that eliminated commercial logging on the Forest. This alternative would not meet the purpose and need stated in the NOI. Specifically, it would not: 1) promote the diversity of forest tree species, forest structure and function described; 2) contribute to publicly desired habitat conditions for game species; 3) enhance favorable ecological conditions to sustain populations of many indigenous or desired species; or 4) supply wood products for local and regional needs. For these reasons, this alternative was eliminated from detailed analysis.

### ***Wilderness Alternative***

The Ottawa currently has three congressionally-designated wildernesses (Sylvania, McCormick, and Sturgeon River Gorge). During the public comment periods, requests were received for additional wilderness, with specific interest in the Trap Hills area.

As part of Forest Plan revision, the Ottawa completed a forestwide roadless area inventory. Following requirements for roadless area inventory in accordance with 36 CFR 219.17, Forest Service Handbook 1909.12, and the Eastern Region Guidelines for Completing Roadless Area Inventories during Forest Plan Revision (USDA FS 1997b).

The roadless area inventory process included review of the Trap Hills area and the Norwich area (the Norwich area was listed on the Roadless Area Conservation Rule inventory). The result of the roadless area inventory showed that only one area, known as Ehlco, met roadless area inventory criteria, so it was carried forward to the wilderness evaluation process (see FEIS, Appendix B – *Roadless Inventory*; and Appendix C – *Wilderness Evaluation*).

The lands that make up the 16,000-acre Ehlco area were purchased in small parcels between 1937 and 1969 from lumber companies that had harvested the majority of the wood products. None of the lands in the Ehlco area were included in the RARE II Roadless Area Review and

Evaluation of 1979, nor did it meet roadless area inventory criteria in the FEIS prepared for the 1986 Forest Plan. During the roadless area inventory process conducted for Forest Plan revision, but prior to release of the 2005 DEIS, there was no public interest specific to this area as a roadless area or wilderness. However, the roadless area inventory conducted for Forest Plan revision showed the Ehlco area met roadless area inventory criteria. The public comment period on the DEIS revealed some interest in Ehlco as wilderness, and some opposition to any additional wilderness. The final wilderness evaluation of Ehlco is documented in Appendix C of this document; however the analysis did not reveal compelling features or conditions to warrant its consideration as a wilderness study area. Therefore, no areas have been proposed to Congress for wilderness study.

### ***National Recreational Area Proposal***

During the Forest Plan revision process, the Ottawa met with members of the Trap Hills Conservation Alliance at their request, to discuss the Trap Hills area and opportunities to preserve it. The Trap Hills Alliance proposed that a portion of the Forest be considered for a National Recreation Area. The area would include lands adjacent to and east from the Porcupine Mountain Wilderness State Park, and encompass the Trap Hills. Their proposal would emphasize semi-primitive recreational opportunities and included areas they recommended for federal wilderness designation.

It was determined that this general area of the Forest does comprise features that would be managed for a similar type of recreational opportunity under the Selected Alternative. Specifically, this area would encompass portions of Management Areas 6.1 (semi-primitive non-motorized), 6.2 (semi-primitive motorized) and 8.1 (designated wild and scenic rivers). In addition, this decision authorizes implementation of management direction for the Trap Hills as a special interest area, which will maintain the special qualities and features of the area. This designation, along with the semi-primitive emphasis in adjacent portions of Management Areas 6.1 and 6.2 would create conditions similar to those sought by the Trap Hills Alliance. Therefore, this suggestion was dropped from further consideration.

### ***No OHV Alternative***

Some comments received requested a ban on all OHV use on the Ottawa. This alternative was considered, but eliminated from detailed study. This decision was primarily based on the Ottawa's Need for Change statement and the purpose and need for Forest Plan revision, which identified the need for the Ottawa to consider OHV management that is better aligned with other jurisdictions in the area. OHV use has historically been permitted on the Ottawa and provides access to various portions of the forest. Related to this, the local counties, the State of Michigan, and nearby national forests allow for OHV use. As a result, this alternative was dropped from detailed consideration.

### ***Aspen Alternative***

This alternative would have the Ottawa manage for a desired condition of maintaining 138,000 acres of aspen type on the Forest. This was the acreage to be managed for aspen under the management direction of the 1986 Forest Plan.

Development of this alternative began with evaluation of land suitability as defined by the NFMA. This suitability analysis was used to determine those acres that are tentatively suited for timber management (see FEIS, Appendix A – *Description of the Analysis Process* for more information). This analysis incorporated improved data about the Ottawa’s vegetative resources, refined ecological information and experience based on nearly two decades of implementing the 1986 Forest Plan. The results of the land suitability analysis determined that maintaining 138,000 acres of aspen on the Ottawa is not feasible, and that the maximum amount of aspen that could be maintained on the Forest was 120,000 acres. The no action alternative, which continues the management direction of the 1986 Forest Plan, was adjusted to reflect the 120,000 acres, rather than the 138,000 acres originally called for under the 1986 Forest Plan. Therefore, an alternative considering maintenance of 138,000 acres of aspen was eliminated from further consideration.

The suitability analysis for the aspen/paper birch type group in plan revision breaks down as follows:

**Table 2-11. Suitability Analysis for Aspen/Paper Birch**

Description	Acres Withdrawn	Total Acres
<b>Total Aspen/Paper Birch Acres on the Ottawa</b>		<b>199,000</b>
Non-Forest Land <ul style="list-style-type: none"> <li>&lt;10% trees, road and utility right-of-ways</li> </ul>	- 6,000	193,000
Wilderness <ul style="list-style-type: none"> <li>Acres of Aspen/Paper Birch Acres within wilderness</li> </ul>	- 5,000	188,000
Steep Slopes <ul style="list-style-type: none"> <li>ELTPs with Class E and F slopes, too steep to operate</li> </ul>	- 16,000	172,000
Ash Drains, Bogs, etc. <ul style="list-style-type: none"> <li>ELTPs with acres of habitat type not appropriate due to irreversible resource damage</li> </ul>	- 17,000	155,000
Stream Buffers <ul style="list-style-type: none"> <li>Lands adjacent to streams, etc. withdrawn for riparian protection</li> </ul>	- 2,000	153,000
Poor Drainage <ul style="list-style-type: none"> <li>ELTPs with acres in drainage classes likely inoperable</li> </ul>	- 13,000	140,000
Class D Slopes <ul style="list-style-type: none"> <li></li> </ul>	- 5,000	135,000
Forested land not appropriate for timber production and MAs with no regularly scheduled timber harvest, such as special interest areas and wilderness.	- 15,000	120,000
<b>Total Aspen/Paper Birch Acres Withdrawn</b>	<b>79,000</b>	
<b>Tentatively Suitable Forest Lands</b>		<b>120,000</b>

The suitability analysis shows the maximum number of aspen acres that are suitable for regularly scheduled timber production. It is likely that had this kind of data been available for the 1986 Forest Plan, the Ottawa would have come to a similar conclusion. Continued implementation of the 1986 Forest Plan, with application of the ELTP information during project development and design, would show that 138,000 acres of aspen could not be treated and maintained without operating on unsuited lands. Therefore, this alternative was eliminated from further detailed analysis. For additional information see the aspen/paper birch management discussion within the Vegetation Section of Chapter 3 of this document.