1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

The Forest Service has prepared this Environmental Impact Statement in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This Environmental Impact Statement discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives.

Chapter Preview	
1.1	Background and Document Structure
1.2	Project Area
1.3	Purpose of and Need for Action
1.4	Proposed Action
1.5	Decision Framework
1.6	Public Involvement
1.7	Issues

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Lakewood Ranger Station.

1.2 Background and Location

The McCaslin project area is located immediately north of Lakewood, Wisconsin (see Figure C-1 in Appendix C). The legal description of the area is: Township 33 North, Range 15 East, sections 1-3, 11-14, and 24-5; Township 33 North, Range 16 East, sections 1-11, 14-23, 27-30; Township 33 North, Range 17 East, sections 5 and 6; and Township 34 North, Range 16 East, sections 16, 17, 20-29; 32-36, Fourth Principal Meridian.

The project area is about 36,000 acres in size. National Forest System lands cover about 22,000 acres (61%) of the project area. The northern portion of the project area is located in Forest County and is part of the original Laona Ranger District. The southern part of the area is located in Oconto County and is part of the original Lakewood Ranger District (see Figure C-1 in Appendix C). At the time the Forest Plan was adopted (1986), composition objectives were established on a district-by-district basis. These objectives and the existing conditions of the McCaslin Area are discussed below in Tables 1-2, 1-3, and 1-4.

The McCaslin project area was last analyzed between 1990-1991. Following this analysis, an array of timber harvests and associated forest management activities were implemented. The main objectives of these activities were to reduce stand densities to desired levels and to move the area's composition and age class distribution towards Forest Plan objectives. Since that time, the forests have continued to grow and many of the stands have, once again, become overstocked. Some of the stands have reached ages at which they should be harvested in order to meet long-term objectives.

After reviewing the Lakewood/Laona Ranger District, it was determined that most other portions of the District had been evaluated and treated since 1990-1. It was also determined that the McCaslin Area had many needs and opportunities for action in order to move the area closer to the long-term goals found in the Nicolet National Forest Land and Resource Management Plan. Therefore, it was determined that an analysis of the McCaslin Area should be conducted to determine its existing conditions, identify where those conditions differ from desired conditions, and to propose and analyze a suite of activities to respond to the area's identified needs.

Analysis of the project area indicates that there are certain conditions that need action to accomplish the direction and desired conditions identified in the Nicolet National Forest Land and Resource Management Plan (Forest Plan) (see 'Purpose of and Need for Action' section for details).

The Chequamegon-Nicolet National Forest is in the process of revising and combining the existing Land and Resource Management Plans (Forest Plans) for the Chequamegon National Forest and the Nicolet National Forest, which were administratively separate at the time the Forest Plans were developed. A Notice of Intent to revise and combine the Forest Plans was issued in 1996. As part of this process, various inventories and evaluations are occurring. Additionally, the Forest is in the process of developing alternative land

management scenarios that could change the desired future conditions and management direction for the Forest. A Draft Environmental Impact Statement (DEIS) will be published in the future that will disclose the consequences of the different land management direction scenarios considered in detail. In addition, as part of this project, analysis was conducted that showed that the majority of actions proposed would be consistent (or not inconsistent) with the Desired Future Conditions direction proposed in the Plan Revision DEIS. Action in this area, now, would more quickly achieve the development of desired forest structures and compositions desired under the existing Forest Plan and would also further many of the goals identified in the Plan Revision process.

As a result of the Forest Plan revision effort, the Forest has new and additional information beyond that used to develop the existing Forest Plans. This information will be used in the analysis of this project to disclose the effects of the proposed activities and any alternatives developed in detail.

The actions in this analysis have been designed to meet the goals, standards, and guidelines of the 1986 Nicolet Forest Plan, as amended. Under regulations of the National Environmental Policy Act (40 CFR 1506.1), the Forest Service can take actions while work on a Forest Plan revision is in progress because a programmatic Environmental Impact Statement – the existing Forest Plan Final EIS, already covers such actions.

1.3 Purpose of and Need for Action

The overriding purpose of the McCaslin Project is to implement vegetation management activities that are consistent with direction in the Nicolet Forest Plan and to respond to the following identified needs for action.

The Nicolet Forest Plan allocated the majority of the lands within the McCaslin project area to Management Areas 1.1, 1.2, 3.1, 3.2, and 4.2. Management Areas 1.1 and 1.2 are found on about 3,600 acres and emphasize aspen management. Management Areas 3.1 and 3.2 are found on about 13,900 acres and emphasize even-aged hardwood management. Management Areas 4.1 and 4.2 are found on about 3,000 acres and emphasize softwood management. For more information on Management Area descriptions and the existing conditions, see Section 3.5. A map showing the management area boundaries (Figure C-2) can be found in Appendix C.

Table 1 -1 – Forest Plan Management Area Descriptions

Management Area	General Direction
1.1 (3468 acres)	Emphasizes mixed forests with a large aspen component, wildlife species associated with aspen, and aspen pulp production in a roaded natural setting (up to 4 miles/ square mile of improved open road).
1.2 (1170 acres)	Same as management area 1.1, but in a semiprimitive motorized setting (an open road density of less than 2 miles/ square mile).
3.1 (4509 acres)	Emphasizes even-aged hardwood forests and associated wildlife, management for large hardwood sawtimber in a roaded natural setting (up to 4 miles/ square mile of improved open road).
3.2 (9436 acres)	Same as management area 3.1, but in a semiprimitive motorized setting (an open road density of less than 2 miles/ square mile).
4.1 (390 acres)	Emphasizes an upland softwood forest and associated wildlife, management for softwood pulpwood and sawtimber in a roaded natural setting (up to 4 miles/ square mile of improved open road).
4.2 (2564 acres)	Same as management area 4.1, but in a semiprimitive motorized setting (an open road density of less than 2 miles/ square mile).
8.2 (631 acres)	Emphasizes the preservation of unique ecosystems for scientific purposes in a semiprimitive motorized setting (an open road density of less than 2 miles/ square mile).(No actions proposed in these areas).
9.1 (82 acres)	Emphasizes minimal investment and management while protecting and maintaining environmental values and public health and safety.

Preliminary analysis of the project area indicates that there are certain conditions that warrant action to accomplish the direction and desired conditions identified in the Nicolet Forest Plan. Specifically, the following needs for action have been identified:

Need #1 – Forest Age and Composition Modification

The current diversity of ages and types of forest stands in the project area vary from desired conditions in the Nicolet Forest Plan. The composition of the forest stands are important to maintain all plant and animal populations, including threatened, endangered, and sensitive species, non-game plants and animals, and game species as well as biological communities and overall ecosystem functions. The following summaries show some of the more notable gaps between the desired future conditions (DFC's) by Management Area. More detailed tables can be found in Section 3.5. Of primary importance in these tables are the differences in aspen and hardwood composition and age structure. These are the dominant habitats in the McCaslin area.

Table 1-2 : Primary Vegetation Goals for MA 1.1/1.2: Mixed forests with a large aspen component

Vegetative Type	*Desired and Existing Conditions for Lakewood Portion (values in percentages)*			*Desired and Existing Conditions for Laona Portion (values in percentages)*			*Nicolet NF Existing Condition*
	DFC	**McCaslin Existing**	**Lakewood RD Existing**	**DFC**	**McCaslin Existing**	**Laona RD Existing**	**Forest-wide Existing**
Jack Pine	<1	0.0	1.2	0	0.0	0.0	1.5
Balsam Fir	2	5.3	2.7	1	0.8	3.2	3.0
Red Pine	1	1.0	5.9	2	3.4	4.0	8.5
White Pine	<1	20.2	5.2	1	0.0	0.4	3.0
White Spruce	<1	4.3	1.7	1	18.4	3.5	3.3
Hardwoods	13	12.4	17.2	37	27.7	38.5	31.1
Oak	8	0.0	7.4	2	0.0	0.0	1.9
White Birch	8	7.8	6.8	1	0.0	0.4	2.5
Hemlock	2	0.0	1.1	1	0.0	0.5	0.6
Aspen	63	48.3	48.8	52	48.6	47.2	42.5
Upland Opening	3	0.7	2.0	3	1.2	2.3	2.1

Table 1-3: Primary Vegetation Goals for MA 3.1/3.2: Even-aged hardwood forests managed for large sawtimber

	Desired and Existing Conditions for Lakewood Portion (values in percentages)			*Desired and Existing Conditions for Laona Portion (values in percentages)*			*Nicolet NF Existing Condition*
Vegetative Type	**DFC**	**McCaslin Existing**	**Lakewood RD Existing**	**DFC**	**McCaslin Existing**	**Laona RD Existing**	**Forest-wide Existing**
Jack Pine	<1	0.7	0.7	<1	0.0	0.0	0.5
Balsam Fir	2	2.1	2.8	<1	0.1	1.0	2.5
Red Pine	4	3.4	6.1	3	0.9	2.4	5.8
White Pine	2	3.8	2.5	1	0.1	0.7	1.8
White Spruce	1	1.1	1.4	2	2.1	3.0	2.4
Hardwoods	32	29.4	40.0	53	66.0	61.4	46.4
Oak	20	4.1	8.7	6	6.5	1.9	5.5
White Birch	4	3.0	3.0	<1	0.0	0.4	2.4
Hemlock	3	0.8	0.3	3	0.0	0.1	0.8
Aspen	28	49.4	31.9	29	23.6	26.8	29.2
Upland Opening	3	2.1	2.7	3	0.7	2.2	2.8

Table 1-4: Primary Vegetation Goals for MA 4.1/4.2: Upland softwood forest managed for pulpwood and sawtimber							
	Desired and Existing Conditions for Lakewood Portion (values in percentages)			***Desired and Existing Conditions for Laona Portion (values in percentages)***			***Nicolet NF Existing Condition***
Vegetative Type	**DFC**	**McCaslin Existing**	**Lakewood RD Existing**	**DFC**	**McCaslin Existing**	**Laona RD Existing**	**Forest-wide Existing**
Jack Pine	17	13.2	8.6	<1	0.0	0.0	7.3
Balsam Fir	1	1.3	1.9	7	0.0	5.2	2.8
Red Pine	24	27.7	30.5	28	6.4	33.4	28.9
White Pine	9	2.1	2.9	8	0.0	0.4	3.3
White Spruce	3	1.2	1.2	8	33.4	12.4	5.1
Hardwoods	4	0.6	16.5	23	21.9	25.2	18.9
Oak	2	34.4	8.2	2	0.0	0.0	4.7
White Birch	2	0.0	1.5	<1	0.0	0.9	1.7
Hemlock	1	2.9	0.7	1	0.0	0.0	0.8
Aspen	32	11.9	24.9	20	32.6	20.4	23.5
Upland Opening	4	4.7	3.0	3	5.7	2.2	3.1

There is a need for modified composition, density, and age distributions of forest stands that move the area toward the desired future conditions identified in the Nicolet Forest Plan. In addition to differences between existing and desired forest composition, the density of trees in hardwood and conifer stands in the area is higher than that called for in the Forest Plan. The high density of trees is suppressing the growth rate of trees, limiting their value from ecological and economic standpoints.

Linked Objectives:

6. Move forest composition toward Management Area goals, especially in aspen and hardwood types.
7. Improve the age class distribution of aspen to more closely match desired conditions (Forest Plan, p. 27).
8. Improve tree vigor in long rotation even and uneven-aged stands by reducing crowding and competition between trees in accordance with Forest Plan direction (Forest Plan, p. 21)
9. Improve structural diversity of tree, shrub, and forb species in hardwood stands by moving them toward uneven-aged conditions (Forest Plan, pp. 89, 97, 113).
10. Enhance species diversity in hardwood stands.

One of the purposes of this project is to use timber sales as the primary method for making desired changes to the forest vegetation (Nicolet Forest Plan Record of Decision, pp.26-8).
The Nicolet National Forest Land and Resource Management Plan (Forest Plan) established a goal of using commercial timber sales to accomplish vegetation management objectives whenever possible. During the last 15 years, numerous timber sale operations have been used on the Lakewood-Laona Ranger District to successfully move forest composition, age class distribution and tree density towards Forest Plan goals. Local demand for timber sales is high and the opportunity to use timber sales to manage vegetation is apparent. The recent history of timber sale offers on the Lakewood-Laona District suggests that the aspen, hardwoods, and conifer timber in the project area would be desirable for purchase. An objective of our action is to meet this goal by using timber harvest to accomplish vegetation management goals wherever feasible and appropriate.

Need # 2- Stand Tending and Reforestation

There is a need to control the competition of vegetation around certain young plantations within the project area. The Nicolet Forest Plan anticipated this need (p. 55) and identifies appropriate methods to maintain health and vigor of desired forest. Following the last analysis of the project area, a number of areas were successfully planted with seedlings or regenerated through natural seeding or sprouting. In some of the areas, brushy species have since taken root and are competing with the desired forest trees. The seedlings represent a considerable investment of labor and money and good forestry practice as well as wise fiscal management suggest the need to protect those investments.

There is a need to reduce brush competition in certain areas to allow for the desired understory development. There are some areas with an overstory of fire tolerant trees, such as oaks, with a long-term objective of developing an understory of the same species. Due to soil and climatic conditions, it is desirable to continue the establishment and development of these forest types. Currently, however, brushy competition is preventing the establishment of desirable seedlings. The Nicolet Forest Plan gives guidance on the use of prescribed fire (pp. 72-3) for such purposes.

There is a need to encourage the regeneration of eastern hemlock and American butternut in the project area. Due to deer browsing, there is also a need to protect the newly-established seedlings to ensure success. The Nicolet Forest Plan has identified the need for a higher representation of hemlock (pp. 89, 105, 113) and it has been a Forest policy to encourage its establishment where opportunities are present. American butternut is a minor timber species in the eastern United States, with an unusually high presence within the State of Wisconsin. In particular, the part of the state in which the project area is located has a relatively high representation of this species. American butternut is currently being attacked nationwide by a very virulent exotic fungus called butternut canker. This disease has decimated butternut populations throughout the range of the tree. Researchers and forest managers are racing to gather information on the tree, the disease, and ways to manage both. Local foresters, in cooperation with Forest Service scientists, are identifying locations that provide good opportunities for butternut regeneration. Several of these areas are located in the project area.

There is a need to increase the white pine component in the project area. There are locations within the project area where long-lived species, such as white pine, white spruce, and eastern hemlock are desirable for long-term management. An example of this includes riparian areas, where such trees would provide shady conditions in the long-term and an assurance of future large woody debris. The Nicolet Forest Plan encourages the establishment of such species in these areas (p. 66). In addition to riparian areas, there area other locations that lend themselves well to white pine management. The Nicolet Forest Plan (pp. 89, 105, 113) gives desired future conditions (DFC's) for vegetation composition in each of the management areas. Analysis shows that the amount of existing white pine is less than desired in portions of the area.

Linked objectives:

4. Improve survival and vigor within recently established plantations by releasing them from competition (in accordance with pp. 55-6 of the Forest Plan).
5. Improve understory diversity and increase long-lived species in riparian zones.
6. Encourage the establishment and survival of eastern hemlock and American butternut.

Need #3– Access Management

There are numerous roads within the project area. The estimated mileage of roads under national forest jurisdiction is 160 miles. The type and condition of the roads varies from hard gravel surface with shoulders to unsurfaced "woods roads." The current road mileage in the parts of the area exceeds the density of roads called for in the Forest Plan (see Table 1-5). Some of these roads are currently non-driveable, but are on the current road inventory. Additionally, the location of some of the existing roads is not appropriate for ongoing management activities. In some cases, due to the fine texture of the soils and other factors, such as extensive use during wet periods, unacceptable impacts to the roads have taken place. The Nicolet Forest Plan gives direction to construct and maintain roads at an appropriate level for planned uses while minimizing soil and water impacts (pp. 56-7, 77). Some of the roads in the project area will be proposed for upgrading (graveling and sloping for improved drainage- see maps) to allow for continued use with fewer impacts. To meet Nicolet Forest Plan open road density Desired Conditions (see Table 1-5) and address problem areas, there is a need to close some of the roads within the project area.

Table 1-5: Miles of improved open road		
Management Area	Desired Future Condition	Existing Condition within project area
1.1	≤ 4 mi./sq. mi. of improved open road.	4.4 mi./sq. miles
1.2	≤ 2 mi./sq. mi. of improved open road.	1.7 mi./sq. miles
3.1	≤ 4 mi./sq. mi. of improved open road.	3.3 mi./sq. miles
3.2	≤ 2 mi./sq. mi. of improved open road.	3.1 mi./sq. miles
4.1	≤ 4 mi./sq. mi. of improved open road.	5.5 mi./sq. miles
4.2	≤ 2 mi./sq. mi. of improved open road.	4.3 mi./sq. miles
8.2	≤ 2 mi./sq. mi. of improved open road.	2.0 mi./sq. miles

Linked objective: Develop and maintain a safe, cost-effective transportation system for future forest management and recreational use while providing needed access for harvest proposed with minimal impacts to the environment (Forest Plan, pp. 20; 56-7; 77).

Need #4 – Erosion Control at Lincoln Lake and North Branch Oconto River

The amount of human use at a dispersed campsite on Lincoln Lake has resulted in erosion on the trail leading to the lake. Likewise, human use at a dispersed campsite near Knowles Dam on the North Branch Oconto River has resulted in erosion problems around the campsite as well as the trail leading down to the river. At that location, the riverbank is unstable and has been sloughing into the river. The erosion is negatively affecting the enjoyment and safety of people using the trails and the river. Nicolet Forest Plan direction (p. 39-40) places an emphasis on resource protection and the correction of health and safety problems, such as trail erosion. The Forest Plan also features the provision and maintenance of recreation sites that encourage dispersed recreation. Therefore, there is a need for reduced erosion on the identified trails around dispersed campsites at these sites while maintaining the existing walk-in access.

Need #5 – Fish and Wildlife Habitat Maintenance and Improvement

Lincoln Lake and the North Branch of the Oconto River are popularly used for fishing.
There is a lack of hiding cover and woody debris for fish at specific locations on Lincoln Lake, the North Branch of the Oconto River, Knowles Creek, an unnamed tributary to Knowles Creek, and Mosquito Creek. The lack of hiding cover and woody debris increases the risk of predation, while reducing opportunities for shade and resting pools. The Nicolet Forest Plan gives direction to provide for fisheries management on waters capable of supporting viable fish populations by maintaining and improving cover and spawning improvement structures (p. 68). Therefore, there is a need to improve fish habitat in these areas that is favorable to the growth and development of fish populations.

Bluegill Creek Impoundment is a popular place for the public to view and learn about wildlife species associated with wetland habitats. It is also excellent potential habitat for fish-hunting ospreys. Currently, there is a lack of a good osprey nesting site at the Bluegill Creek Impoundment which can be viewed from the existing barrier-free viewing platform. The Nicolet Forest Plan gives direction to construct and maintain impoundments and habitat improvement structures for the benefit of wildlife and the enjoyment and education of the public (pp. 65, 69, 39, 44). Therefore, there is a need to provide a long-term osprey nesting site that is viewable from the public viewing platform.

The Forest Service maintains numerous permanently non-forested areas as one way of providing a variety of habitats for wildlife (Forest Plan, pp. 64, 89, 105, 113). These are scattered throughout the project area and are found in a variety of sizes. Over time, brush and other competing vegetation has encroached on these openings. There is a need to maintain these areas in an open condition in accordance with Forest Plan direction for the benefit of a number of wildlife species.

Need #6 - Archaeological Evaluation and Interpretation

There are 26 known historic sites within the project area that have not yet been formally evaluated. In accordance with Forest Plan direction (p. 43), the sites have undergone a preliminary evaluation and impacts

to these sites have been and will continue to be avoided, mitigated, or minimized. Ultimately, as conditions allow and in accordance with the direction from the State Historic Preservation Office (SHPO), the sites need to be formally evaluated. There is a need to formally evaluate these sites to determine their significance and to determine whether or not they should be nominated for listing in the National Registration of Historic Places.

Four of these sites have a high potential for public interpretation. The public continues to be interested in interpretive historical sites. The Nicolet Forest Plan gives direction to develop interpretive programs that support Forest Service Programs (such as the Heritage Resource Program) and describe subjects of interest to the public (p. 44). Interpretation of these sites could provide Forest visitors and nearby residents an opportunity to learn more about local and regional cultural history. Therefore, there is a need to provide public interpretative opportunities of these sites.

1.4 Proposed Action

Based on the opportunities and needs outlined in the Purpose of and Need for Action section, the Forest Service proposes the following actions in the McCaslin Project Area:

About 8,655 acres of timber harvest to manage forest age and composition, including:
- 4,686 acres selection harvest
- 2,611 acres thinning
- 1,099 acres clearcut harvest
- 231 acres overstory removal harvest
- 28 acres shelterwood harvest

To provide efficient access for management of vegetation, about 3.0 miles of road construction, 14.3 miles of road reconstruction, and 6.0 miles of temporary road clearing would occur.

About 800 acres of stand tending and reforestation would occur, including:
- 314 acres of hand release of young plantations
- 222 acres of prescribed burning
- 277 acres of understory planting

Road Closures
- close and reclassify 1.2 miles of roads as Maintenance Level 1 System Roads
- close and remove from the Forest's classified road system 21.9 miles of roads

Erosion Control
- reconstruct 150 feet of trail
- stabilize 100 feet of bank on the North Branch Oconto River

Fish and Wildlife Habitat Maintenance and Improvement
- fell approximately 25 trees along the shorelines of Lincoln Lake and the North Branch Oconto River
- remove in-stream debris (½ mile), place brush bundles, logs, and deflectors (500 feet) in portions of the North Branch Oconto River, Knowles Creek, an unnamed tributary to Knowles Creek, and Mosquito Creek.
- construct and install an osprey nesting platform
- hand release 188 acres in 125 wildlife openings using brush cutters
- plant native fruit-bearing shrubs in 7 acres of wildlife openings

Archaeological Evaluation and Interpretation
- evaluate 26 sites
- nominate sites that appear eligible for listing in the National Register of Historical Places, construct interpretive signs, benches, and 50 feet of trail at 4 identified sites

1.5 Decision Framework

The District Ranger of the Lakewood/Laona Ranger District, Joel Skjerven, is the Responsible Official for making project-level decisions for the McCaslin Project.

Decision-making from the McCaslin Project is limited to National Forest System lands within the McCaslin project area. See Figure 3 in Appendix C for a map of the McCaslin project area.

The decision to be made is what vegetation and road management actions would be taken in the McCaslin project area, when these actions would occur, and which design features, management requirements, and treatment practices would be applied.

1.6 Public Involvement

On April 12, 2000, scoping letters were sent to various Native American tribes requesting comments on a set of proposed actions for the Deer Island Project. This project was to take place in the southern half of the McCaslin project area. On April 24, 2000, a similar scoping letter was sent to members of the public who owned property in that area or who, otherwise, had an interest in the project. As a result of the outreach, the Forest Service received fourteen letters or telephone calls with comments from individuals or organizations.

A similar project was planned for the north half of the McCaslin project area immediately following completion of analysis of the Deer Island Proposals. The Forest Service subsequently decided to combine the two proposals and call them the McCaslin Project.

On January 3, 2001, letters describing the McCaslin Project and its proposals were sent to area Native American tribes, requesting comments. On March 30, 2001, a similar letter was sent to the general public. This letter was sent to landowners and interested parties and included those people who were previously contacted for the Deer Island proposal. This proposal has appeared on the Forest's quarterly "Schedule of Proposed Actions" since April of 2001. This schedule is mailed to all parties who have asked to be informed of projects proposed on the Chequamegon-Nicolet National Forest (400-500 parties).

On April 5, 2001, a Notice of Intent (NOI) to prepare and environmental impact statement (EIS) was published in the Federal Register. The NOI asked for public comment on the proposal during the period of April 5 and May 7. As a result of the outreaches described, the Forest Service received 83 responses providing comments and concerns.

Using the comments from the public and other agencies, the interdisciplinary team developed a list of issues to address. These issues are discussed in the following section.

1.7 Issues

An interdisciplinary team and the responsible official reviewed all public comments. They separated the issues into major and minor issues. Major issues are effects on resources that sharply define differences between alternative actions. Minor issues were those concerns where the interdisciplinary team determined it to be informational to disclose the effects, but due to mitigation measures or project design, there is little discernable difference between alternatives. Relevant major and minor issues are discussed below.

Non-relevant public and internal concerns were dismissed if they were: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made or; 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations explain this delineation in Sec. 1501.7, "…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)…"

The Forest Service identified the following major issues during scoping:

1.7.1 Vegetation:

Actions are intended to alter forest composition and/or age structure of the treated sites. These changes alter the diversity of habitats that occur across the landscape as a whole. Additionally proposed actions may impact habitat conditions for rare and sensitive plants as well as potential effects resulting from changes in wildlife populations. Other species, such as butternut and hemlock, may benefit from some of the actions proposed.

The proposal could also have the potential to increase the spread of non-native invasive plant species within the project area. These aggressive species can outcompete and negatively impact native flora. This analysis will consider the potential for effects such as these as well as many others.

Indicators:

- Vegetation Composition (measured by % of cover types by MA and area-wide)
- Vegetation Age Class Distribution (measured by age classes by forest type)
- Forest Plan Composition Objectives
- Sensitive Plant Viability

This issue is partially addressed by mitigation measures and design features. See section 2.3 and 4.5 for details.

1.7.2 Wildlife:

There are concerns that the proposed activities could have negative effects on a variety of wildlife species. This can happen through direct impacts to neotropical migrants, such as destruction of their nests during logging operations, or indirect impacts such as habitat alteration through forest fragmentation. Various species can be affected either positively or negatively. For example, tree removal can result in certain species being more vulnerable to competition or predation from other species. Conversely, some species may benefit by an increase in suitable habitat that results from forest management actions.

One specific concern that was raised is the potential of the proposed action to increase white-tailed deer numbers by increasing available aspen browse through regeneration harvests. Another concern was raised regarding potential effects to neotropical migratory birds.

This analysis will consider the effects on wildlife and analyze those that are considered to be potentially significant. Since it would be impossible to track the effects of this project on each and every species found in the analysis area, Management Indicator Species (MIS) are used to represent most habitats and the majority of all other species (Nicolet Forest Plan FEIS, p. 3-33). The effects to other, less common, species are evaluated in the analysis of Threatened, Endangered, and Sensitive (TES) species and Regional Forester's Sensitive Species.

Indicators:

- TES Species Habitats and Population Estimates
- Management Indicator Species habitats, trends and population estimates

This issue is partially addressed by mitigation measures and design features. See section 2.3 and 4.5 for details.

1.7.3 Landscape Pattern:

The existing landscape pattern (from ecological conditions and past treatments) is one of large areas of maturing forest broken by stream and wetland corridors and young forests from past harvests and catastrophic events. The alternatives could change this pattern.

Landscapes can be fragmented by vegetation management activities, such as timber harvesting, road construction, and wildlife opening management. Fragmentation of the landscape impacts species differently. Increased landscape fragmentation benefits "edge-loving" wildlife species, such as deer and some species of birds. Other species, that prefer less edge, can be negatively affected by increased fragmentation. Effects on landscape pattern last for shorter time periods when areas of young forests are aggregated. There are many ways of measuring landscape patterns. However, in this analysis, landscape patterns will be measured to disclose the changes in forest fragmentation, interior, and edge habitat. Since edge, the amount of interior

forest, and the amount of edge-affected forest would be most directly affected by the proposals and have the most direct and measurable effects on wildlife, these criteria were chosen for this analysis. It will be used mainly to help predict potential implementation effects on plants and wildlife.

Indicators:

- Amount edge
- Acres Interior Habitat
- Acres Edge-affected Habitat

In addition to the major issues described above, the following **minor issues** will be addressed throughout the document. Many other minor issues were identified during public scoping but will not be analyzed in this document. Disposition of these issues can be found in the analysis file at the Lakewood Ranger Station.

1.7.4 Soil Concerns:

Ground-based timber harvesting operations have the potential to cause displacement and compaction of forest soils. These impacts can reduce forest productivity by increasing erosion potential through rutting and reducing infiltration, pore space, and aeration through compaction.

Indicators:

- Acres/miles of various actions with potential to impact soils
- Nature of soils affected

1.7.5 Water Quality and Fish Habitat:

Road construction and timber harvesting have the potential to have adverse effects on water quality and fish habitat. The major source of potential impacts to water quality and fish habitat would be sedimentation from non-point sources such as timber harvest operations (logging road and skid trail construction and use, operation of other heavy equipment).

Indicators:

- Acres/miles of treatments occurring adjacent to aquatic sites
- Nature of treatments and mitigation measures used.

1.7.6 Air Concerns

Prescribed burning and road construction have the potential to increase the levels of particulates to the air. Proposals in this project would meet Federal air quality standards.

Indicators

- acres and types of prescribed burns
- degree of change in road mileage and use

1.7.7 Road Concerns:

Roads allow access for treatment activities, inventories, surveys, as well as recreational access to the public. But the presence and construction of roads can also have a variety of adverse environmental effects. Some wildlife species are sensitive to human disturbance

Indicators:

- total road density
- open road density
- Forest Plan Management Area goals

1.7.8 Recreation Concerns:

Timber harvest activities have the potential to conflict with recreational activities popular in the area, such as snowmobiling, sightseeing, and camping. These conflicts can be minimized or avoided with the use of mitigation measures and timing restrictions.

Indicators:

- Nature of activities and mitigation measures used

1.7.9 Heritage Resource Concerns:

Activities such as road construction, prescribed burning, and timber harvesting have the potential to impact areas of archaeological importance.

Indicators:

- Nature of activities and mitigation measures used

1.7.10 Visual Quality Concerns:

Timber harvest and road construction activities have the potential to impact visual quality by modifying visible areas and changing landscape forms.

Indicators:

- Compliance with Nicolet NF Visual Quality Objectives
- Types and extents of activities occurring in Modification, Partial Retention, and Retention Areas
- Sizes and lengths of openings along key travel routes.

1.7.11 Economic Concerns

The Forest Service and the public are concerned that the proposed action or alternatives can be implemented with costs that are low relative to the benefits realized. In addition, some of the activities proposed, such as timber harvests have the potential to make an impact on the local economy.

Indicators

- Present net value
- Benefit cost ratio
- Income to communities and jobs created

1.7.12 Relation to Forest Plan Revision

The Chequamegon-Nicolet National Forest is in the process of revising its Forest Plan. Would implementing proposed actions limit the range of options for decision making and alternative choices in revising the Forest Plan?

Indicator

- Acres of actions potentially inconsistent with Plan Revision direction

The following table (**1-6**) displays where to find the various discussion of issues throughout this document..

Table 1-6: Issue Tracking Matrix

Issue	1.0 Purpose and Need	2.0 Alternatives	3.0 Affected Environment	4.0 Environmental Consequences	App A	App B	App C	App D	App E	App F	App B
Major Issues											
Vegetation	1.3, 1.7.1	2.1, 2.2, 2.3, 2.4	3.5	4.5	X		X	X		X	
Wildlife	1.3, 1.7.2	2.1, 2.2, 2.3, 2.4	3.7	4.7	X			X			
Landscape Pattern	1.3, 1.7.3	2.2, 2.3, 2.4	3.6	4.6			X				
Minor Issues											
Soil Resources	1.3, 1.7.4	2.3, 2.4	3.2	4.2	X		X		X		
Water Resources	1.3, 1.7.5	2.3, 2.4	3.3	4.3	X						
Air Resources	1.3, 1.7.6		3.4	4.4							
Transportation	1.3, 1.7.7	2.2, 2.3	3.9	4.9		X	X				X
Fish Resources	1.3, 1.7.5	2.2, 2.3	3.8	4.8	X						
Recreation	1.3, 1.7.8	2.3	3.10	4.10	X						
Heritage Resources	1.3, 1.7.9	2.2, 2.3	3.12	4.12	X						
Visual Quality	1.3, 1.7.10	2.3	3.11	4.11	X						
Economics	1.3, 1.7.11	2.4	3.13	4.13							
Forest Plan Revision	1.3, 1.7.12		3.14	4.14							