
Chapter 3

Affected Environment and Environmental Consequences

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the existing physical, biological, and social resources of the Echo Trail Area Forest Management Project that may be affected by the alternatives presented in Chapter 2. It also presents the direct, indirect, and cumulative effects that the alternatives may have on those resources. The discussion of the affected environment and environmental effects was combined into one chapter to provide a clear picture of what the resources are and what could happen to them under the alternatives. The analysis of environmental effects provides the basis for comparison of alternatives that appears at the end of Chapter 2 and discloses the environmental effects of the alternatives described in Chapter 2. Chapter 3 includes:

- Adverse environmental effects which cannot be avoided should the proposal be implemented
- Relationship between short-term uses of the human environment and the maintenance and enhancement of long-term productivity
- Irreversible or irretrievable commitment of resources which would be involved in the proposal should it be implemented
- Possible conflicts between the proposal and other agency or tribal land use plans, policies, and controls within the Project Area
- Tribal communities
- The resources discussed include:
 - Vegetation
 - Wildlife Habitat
 - Recreation
 - Forest Plan Inventoried Roadless Areas
 - Scenic Quality
 - Soils
 - Water Quality and Watershed Health
 - Fire Regime Condition Class
 - Non-native Invasive Species (NNIS)
 - Heritage Resources
 - Economics
- Energy requirements and conservation potential
- Natural or depletable resource requirements and conservation potential
- Urban quality/historic and heritage resources
- Effects on consumers, civil rights, minority groups, women, and environmental justice
- Effects on prime farmland, rangeland, and forest land
- Optimality and appropriateness of harvest treatments
- Effects on flood plains

The environmental effects related to each of the resource and issue areas are discussed immediately following the presentation of the affected environment for each resource. The Environmental Effects sections provide the scientific and analytical basis for the comparison of the alternatives presented in Chapter 2. They present the expected effects on the physical, biological, social, and economic environments associated with implementation of each of the alternatives. The direct, indirect, and cumulative effects on each resource are disclosed. Effects are quantified when possible, although qualitative discussions are sometimes necessary. In general, short-term effects are those within the next 10 years and long-term are effects that may last longer than 10 years.

3.2 ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

Implementation of any of the action alternatives could potentially result in some adverse environmental effects that cannot be effectively mitigated. The interdisciplinary procedure used to identify specific vegetation and road management actions in the alternatives was designed to eliminate or reduce the potential adverse effects. Although the development of alternatives included avoidance of potentially adverse environmental effects, some adverse effects to the environment that cannot be totally mitigated may occur. These effects are disclosed in applicable resource sections. In addition, the application of Forest Plan standards and guidelines, Minnesota Forest Resource Council (MFRC) Voluntary Site-level Forest Management Guidelines, design features, and mitigation measures are intended to further limit the extent, severity, and duration of these effects.

The intensity and duration of these effects depends on the alternative and the mitigation measures applied to protect resources. Most unavoidable effects are expected to be short term. In all cases, the effects would comply with established legal limits, such as the maximum time allowed for regeneration under the National Forest Management Act (NFMA).

Ground-disturbing activities could result in temporary small increases in sediment loads in some streams. Forest Plan standards and guidelines, MFRC Voluntary Site-level Forest Management Guidelines, and Project design features and mitigation measures are designed to prevent adverse effects to soil and water. However, small short-term effects are unavoidable. For example, if a culvert or other crossing structure is needed for a road, the portion of a streambed occupied by the crossing may result in short-term small impacts to fish habitat.

Both the amount and distribution of mature and overmature stands would be reduced through implementation of any of the action alternatives. Because some wildlife species rely on habitat conditions provided by mature and overmature stands, a change in the population of some wildlife species can be expected. As there would be a reduction in the amount of mature and over-mature forest, there would be an increase in the amount of young forest and this change in age class would then benefit species dependent on young forest. The analysis of alternatives considered the needs of species needing both mature forest and young forest habitat. See the Wildlife Section (Section 3.8) of this EIS for more information.

Timber harvest and roads built to implement treatment activities would alter the visual appearance of the natural landscape. In these cases, the effects of seeing the change in the natural landscape would be reduced and eliminated by natural re-growth of vegetation and planting.

All of the action alternatives would result in some level of noise from logging equipment used at harvest sites and logging trucks used on roads. Recreation is an important use of the Project Area, and the serenity of the forest is a valued feature to many recreational users. However, noise from the action alternatives would last only as long as the harvest operation was occurring and would generally occur during times of low recreational use. See the Recreation section (Section 3.9) of this EIS for more information.

Some adverse effects are transitory. For example, air quality would be affected by smoke or emissions from burning of slash piles, as well as equipment used in road construction, timber harvest, timber hauling, gravel pit use, and the operation of internal combustion engines. Where they occur, these activities may have localized temporary and minor adverse effects on air quality.

3.3 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE HUMAN ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

All action alternatives would comply with the mandate of the Multiple Use and Sustained Yield Act of 1960, which requires the Forest Service to manage National Forest System land for multiple uses, including timber, recreation, fish and wildlife, range, and watershed. All renewable resources are to be managed in such a way that they are available for future generations. The harvesting and use of standing mature trees can be considered a short-term use of a renewable resource. As a renewable resource, trees can be re-established if the productivity of the land is not impaired.

Maintaining the productivity of the land is a complex, long-term objective. All alternatives protect the long-term productivity of the Project Area through the use of specific standards and guidelines, mitigation measures, and the Minnesota Forest Resources Council's Voluntary Site-level Forest Management Guidelines.

The action alternatives also enhance long-term productivity of the land through the vegetation management harvest actions. Harvesting aspen and jack pine to maintain the forest types and increasing conifer on the landscape contribute to landscape ecosystem objectives that were developed to provide for long-term productivity. The harvest actions in addition to the diversity planting and release work all enhance forest health (and long-term productivity) and provide some defense against insect and disease infestations.

Soil and water quality are two key elements of ecosystem productivity. These two resources would be protected in all alternatives in order to avoid damage that could otherwise take many decades to rectify. Sustained yields of timber, wildlife habitat, and other renewable resources all rely on maintaining long-term soil productivity. The quantity and quality of water in the Project Area may fluctuate as a result of short-term uses, but no long-term effects to the water resource are expected to occur as a result of vegetation management or other resource activities.

All alternatives would provide the fish and wildlife habitat necessary to maintain viable, well-distributed populations of existing native and desired non-native vertebrate species. The abundance and diversity of wildlife species depend on the quality, quantity, and distribution of habitat used for breeding, feeding, or resting. Management indicator habitats are used to measure the effects on most wildlife species because they represent the major biological communities and broad spectrum of wildlife needs. Specific indicators were selected for those individual species that have more specialized habitat requirements or because of concern for their continued viability. The effects of the Project on these species are disclosed in the wildlife section of this chapter.

By managing and protecting the management indicator habitats, other species associated with the same habitat would also benefit. The alternatives provide design features and mitigation measures for maintaining long-term habitat and species productivity. The alternatives vary in the level of risk to the quality and quantity of wildlife habitat. See the Wildlife section (Section 3.8) of this EIS for more information.

Opportunities for developed and dispersed recreation use, including hiking, hunting, canoeing, skiing, and fishing, would be maintained for future generations. The forest setting in which these activities occur varies, but the long-term potential for the Project Area to provide a spectrum of recreation opportunities would be maintained in all alternatives.

3.4 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSAL SHOULD IT BE IMPLEMENTED

Irreversible commitments are decisions affecting nonrenewable resources such as soils, wetlands, and heritage resources. Commitments are considered irreversible when recovery of the resource would occur only over a long period of time or at great expense. Commitments are also considered irreversible when the resource would be destroyed or removed.

Loss of soil due to erosion is an example of an irreversible commitment of resources. However, due to the incorporation of MFRC Voluntary Site-level Forest Management Guidelines, standards and guidelines, design features, and mitigation measures specified in this document, it is not anticipated that there would be any significant soil loss under any of the alternatives.

Gravel removal would constitute an irreversible commitment of resources. The National Forest System existing (36) and proposed new (1) gravel pits would continue to be available for use during Project implementation and for current and future agency and public use. Although some pits would be expanded, there is an abundance of gravel in the Project Area and the known supply far exceeds the foreseeable demand (see Appendix G).

Loss of cultural resource sites resulting from accidental damage would be an irreversible commitment of resources. The standards and guidelines, surveys performed prior to activities, design features, and mitigation measures specified for the alternatives provide reasonable assurance that there would be no loss of cultural resources.

Irretrievable commitments of natural resources are commitments that result in the loss of productivity or loss in use of resources due to management activities proposed in the alternatives. Such opportunities are foregone for the period of time that the resource cannot be used.

Foregoing current harvest opportunities at this time may represent an irretrievable commitment of resources because the unharvested volume would not result in any current economic benefits. In addition, foregoing harvest would delay the time needed to return the age class and species composition to a more desirable condition and, in the case of units that would be converted to pine and other conifer species, delay the development of new pine and conifer stands. Foregoing harvesting would represent an irretrievable rather than irreversible commitment of resources because areas not harvested could be harvested in the future if they are still classified as suitable for timber harvest.

Harvesting of trees also produces an immediate irretrievable change in the plant communities and the habitats that are present, converting them to earlier successional stages. On the other hand, not harvesting overmature trees would also eventually produce an irretrievable change in vegetation communities and habitats because of natural mortality, but at a slower rate than with harvest.

Road construction would take land out of forest production and would be considered an irretrievable loss of site productivity during the period the roads are used. Temporary use roads are considered short duration commitments while the roads are being used. Temporary roads would be revegetated over time and would then return to productive forest habitat. NFS classified roads are a long-term commitment.

The removal of gravel from pits would result in a loss of productivity for the top soil and vegetation affected. Gravel pits would be rehabilitated after the gravel source is depleted. Rehabilitation activities include returning top soil to the site and promoting growth of grasses, shrubs, and/or trees, following individual pit plans.

The reduction in visual quality of an area because of timber harvest is an irretrievable commitment of resources. However, the commitment would not be considered irreversible, because the visual quality of viewsheds would typically recover after a relatively short period of time. The regenerated trees would eventually gain color and height, and it would not be obvious to the casual observer that the stands are regenerated stands. Alternative 1 would have no irretrievable commitment of visual quality. The commitment of resources that would result from implementing any of the action alternatives would comply with the 2004 Forest Plan standards and guidelines. Harvest unit design features and mitigation measures would minimize the short term visual effects.

3.5 POSSIBLE CONFLICTS BETWEEN THE PROPOSAL AND OTHER AGENCY OR TRIBAL LAND USE PLANS, POLICIES, AND CONTROLS WITHIN THE PROJECT AREA

The Forest Plan EIS discusses policies and control in relation to others on page 3.10-5.

The Echo Trail Area Forest Management Project interdisciplinary team coordinated with other agencies and local tribal representatives in this analysis. (Section 1.10) The interdisciplinary team requested vegetation management plans from the State of Minnesota, Lake County, St. Louis County, industrial and other landowners for land they manage within the Project Area. Inventory information, as well as proposed harvest information, was shared. No conflicts between any of the alternatives and other landowners' management plans were apparent.

3.6 TRIBAL COMMUNITIES

Tribes are considered to be sovereign nations; the United States government and its departments have a responsibility to recognize this status. The federal relationship with each tribe was established by, and has been addressed through, the Constitution of the United States, treaties, executive orders, statutes, and court decisions. Government-to-government consultation between the federal government and federally recognized American Indian tribal governments acknowledges the sovereign status of these tribes. This consultation supports Executive Order 13175 (November 6, 2000), which recognizes the sovereignty of federally recognized American Indian tribes and the special government-to-government relationship.

Beginning in the mid-nineteenth century, the government of the United States made treaties with the Ojibwe that ceded areas of land in northern Minnesota to the federal government. In return, specific reservations were created for the tribes' use and other considerations specified. The treaties also preserved the right of the Ojibwe bands to hunt, fish, and gather off the reservations within the treaty area. Tribal interests and uses on National Forest lands are protected through various statutes. The federal trust doctrine requires that federal agencies manage the lands under their stewardship with full consideration of tribal rights and interests, particularly reserved rights, where they exist.

The Superior National Forest has a role in maintaining these rights because it is an office of the federal government responsible for natural resource management on lands subject to these treaties. The Superior NF is located on lands ceded by the Ojibwe to the United States in 1854 and 1866. Three bands - Grand Portage, Fond du Lac, and Bois Forte (Nett Lake) – live in proximity to the Forest and are directly affected by the treaties. The tribes consider many areas in the Superior NF important to them for cultural, historic, traditional, and spiritual reasons.

Article 11 of the 1854 treaty states that Ojibwe within the treaty area would continue to have the right to hunt and fish on lands they ceded. A court decision (*Fond du Lac Band of Chippewa v. Carlson*) has confirmed this right to hunt, fish, and gather without regulation by the State of Minnesota.

This guarantee is important in the context of natural resource management. Forest direction is to generally assure the availability of resources to support the continued exercise of treaty rights and cultural practices, including access to such resources and places of traditional practices. The objective is to maintain sufficient availability of resources for the continued harvest or utilization needed to satisfy tribal needs. Important considerations include trends in species viability and watershed conditions as well as changes in access to traditional places. The area of consideration includes lands of other ownerships within and adjacent to the NFS boundaries. Tribal interests extend beyond National Forest System land; this larger area lends a broader landscape perspective to maintaining ecological sustainability on the Forests.

The 1854 Ceded Territory

On September 30, 1854, a treaty was concluded at La Pointe, Wisconsin, between the United States and Bands of Lake Superior and Mississippi Chippewa (Ojibwe). The Lake Superior Bands included the La Pointe Band, the Ontonagon Band, L'Anse Band, Vieux De Sert Band, the Grand Portage Band, the Fond Du Lac Band, the Lac Court Oreille Band, the Lac Du Flambeau Band, and the Bois Forte Band. The Mississippi Bands ceded their interest in the territory in consideration for the Lake Superior Bands ceding their interest in lands farther west.

The territory ceded by the Treaty of La Pointe encompasses much of the Arrowhead Region of Minnesota. The north boundary is the international boundary with Canada and the eastern boundary is generally Lake Superior; the south boundary was set at the “southern boundary-line of the Chippewa country.” The western boundary is more complicated, consisting of lines connecting the Snake, St. Louis, East Swan, and Vermilion Rivers. All of Lake and Cook Counties is included, as well as most of Carlton and about two-thirds of St. Louis County. Small portions of Aitkin and Pine Counties are also included. Most of the Superior National Forest is within this area.

Rights were retained under the Treaty of 1854 to hunt and fish within the Ceded Territory. Article 11 states “And such of them [Chippewas of Lake Superior] as reside in the territory hereby ceded, shall have the right to hunt and fish therein, until otherwise ordered by the President.”

Reservations for all the Bands of Lake Superior Chippewa except the Bois Forte Band were established in Article 2. Of the nine bands, three reside in Minnesota within or adjacent to the ceded territory and the other six in Wisconsin. The Fond du Lac Band has a reservation in Carlton and southern St. Louis Counties. The Grand Portage Band has a reservation in Cook County in the extreme northeastern tip of the Ceded Territory. The Bois Forte band has reservations on Vermillion Lake in St. Louis County and at Nett Lake in St. Louis and Koochiching Counties.

Tribal Cultural, Economic, and Governmental Interests

Culture is the whole set of learned behavior patterns common to a group of people at a certain period of time, as well as their interactive behavior systems, material goods, or thoughts and beliefs. People rely on their culture in order to live, relate to others as collective groups, and know how to both understand and function in their world. On the Superior National Forest, the Ojibwe tribal culture is dominant.

The continued availability of traditionally utilized natural resources is crucial to Ojibwe culture. Now, as in the past, many places throughout the landscape are visited during a yearly cycle to collect food, medicines, and other materials, as well as for religious practices and social gatherings. Plants and animals gathered from prairie openings, aquatic environments, and forests provide sustenance. The traditions of gathering these and other natural resources continue to be economically and spiritually important. Because of their concern with the continuation of this aspect of Ojibwe culture, the bands take an active role in the protection and restoration of many species of plants, animals, and fish. The bands also claim that access to these resources and traditional cultural places is an inherent right.

Use of the natural resources for economic benefit is important to many band members through employment and the operation of various forest product businesses. The Forests, State, county and tribal governments themselves provide employment opportunities in natural resource management and there is interest in terms of job training, fire fighting, contracts for construction and forest management, and State and private forestry rural assistance opportunities. There is also widespread use of forest products tied to the gathering for personal, traditional and treaty purposes; this includes fishing, hunting, trapping, harvesting wild rice, tree boughs, saps, roots, bark, berries, medicines, firewood and other items.

There are numerous areas throughout the Forest that have traditional, cultural, and spiritual significance to the bands. The use and protection of these areas is a way of maintaining traditional links to past generations. Traditional use areas often have some aspect of spiritual significance. The bands believe that archaeological sites and past cemetery areas, many of which are unplatted, are sacred and should be protected.

The Ojibwe interest in the Forest goes beyond that of spiritual and cultural to the unique legal relationship that the United States government has with tribal governments. These federally recognized tribes have sovereign status.

Project Effects on Tribal Concerns

During development of the Draft EIS, members of the Echo Trail Area Forest Management Project interdisciplinary team met with personnel from the 1854 Authority on July 26, 2005 and with personnel from the Boise Forte Reservation Tribal Council on September 9, 2005. Further discussions occurred with personnel from the 1854 Authority during development of the Final EIS. The Responsible Officials, Nancy S. Larson and Mark E. Van Every, and Project Coordinator, Carol Booth, met with 1854 Authority personnel on June 26, 2006. During consultation, tribal representatives stated their main interests were maintaining opportunities for hunting, fishing, and gathering, enhancing habitat for game species, and protection of heritage resources. Their concerns are primarily incorporated into the significant Issues # 1 and #2 (section 1.12). The Wildlife and Heritage Resource sections in this chapter show how the alternatives respond to their issues.

Discussions with tribal contacts also included clarification regarding the number of existing miles of road that are winter and not open to any motorized use for resource considerations. Of the existing 321 total miles of classified road, 99 miles (about 30 percent) are winter roads not open to any motorized use because the roads are in low areas without any surfacing. The percent of winter roads remains the same for the action alternatives.

In order to address the tribal concern regarding road access for hunting and gathering, the IDT analyzed some aspects of the action alternatives' effects to the NFS classified road system. Those aspects of the road system included the average length of the roads that would be closed, the miles of roads open to ATVs/ORVs and to all motorized uses and the acres of land available within one-half mile of a road drivable by ATVs/ORVs and to all motorized uses. A distance of one-half mile was chosen because it is a reasonable distance to walk from a road when participating in hunting and gathering activities. (The data shown below cannot be compared with the data displayed in the Draft EIS. Data shown in the Draft EIS was not clearly defined.)

The action Alternatives 2, 3 Modified, and 4 have the same impact on the long-term NFS classified road system and differ primarily in the number of miles of temporary road. (See Appendices C and D for details of the NFS classified road system proposals.) Temporary roads would not be open to public motorized travel. Therefore, the analysis compared the action alternatives with the existing condition of the transportation system. See Table 3.6-1 for miles of road open to ATVs/ORVs and to all motorized uses and the acres of land within one-half mile of a road open to ATVs/ORVs and to all motorized uses.

Table 3.6-1. Access Effects due to Proposed Changes in the Transportation System		
	Alt. 1 (Existing Condition)	Alt. 2 Alt. 3 Mod. Alt. 4
NFS land within ½ mile of a road open to all motorized uses including ATVs/ORVs (percent)	64%	58%
NFS land within ½ mile of a road open to ATV use (percent)	59%	46%
Roads open to ATVs/ORVs (miles)	143	100
Roads open to all motorized uses* (miles)	262	215

*these miles include the miles of road open to ATVs/ORVs

The analysis indicates that the action alternatives would result in a six percent reduction of the NFS land accessible within ½ mile of roads with motorized uses and a 13 percent reduction in the acres of NFS land within ½ mile of roads open to ATVs/ORVs. Forty-three miles of road currently open to ATVs/ORVs and an additional four miles of road currently open to all motorized uses would no longer be available for motorized use. The average length of road that would be closed is less than 0.2 miles long. It is important to note that in many cases where roads would be closed, space would remain for dispersed camping at the beginning of the road.

In conclusion, tribal members and the public would have fewer miles to use and acres to access using their ATV or other motorized mode of travel; but, overall motorized access, considering all the drivable roads in the area, would change very little because the length of road closed would be so small. This may affect some individuals who use roads that would be closed or decommissioned. However, it is not anticipated to have a large affect on motorized access for hunting and gathering use when viewed in the context of the local and regional area.

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