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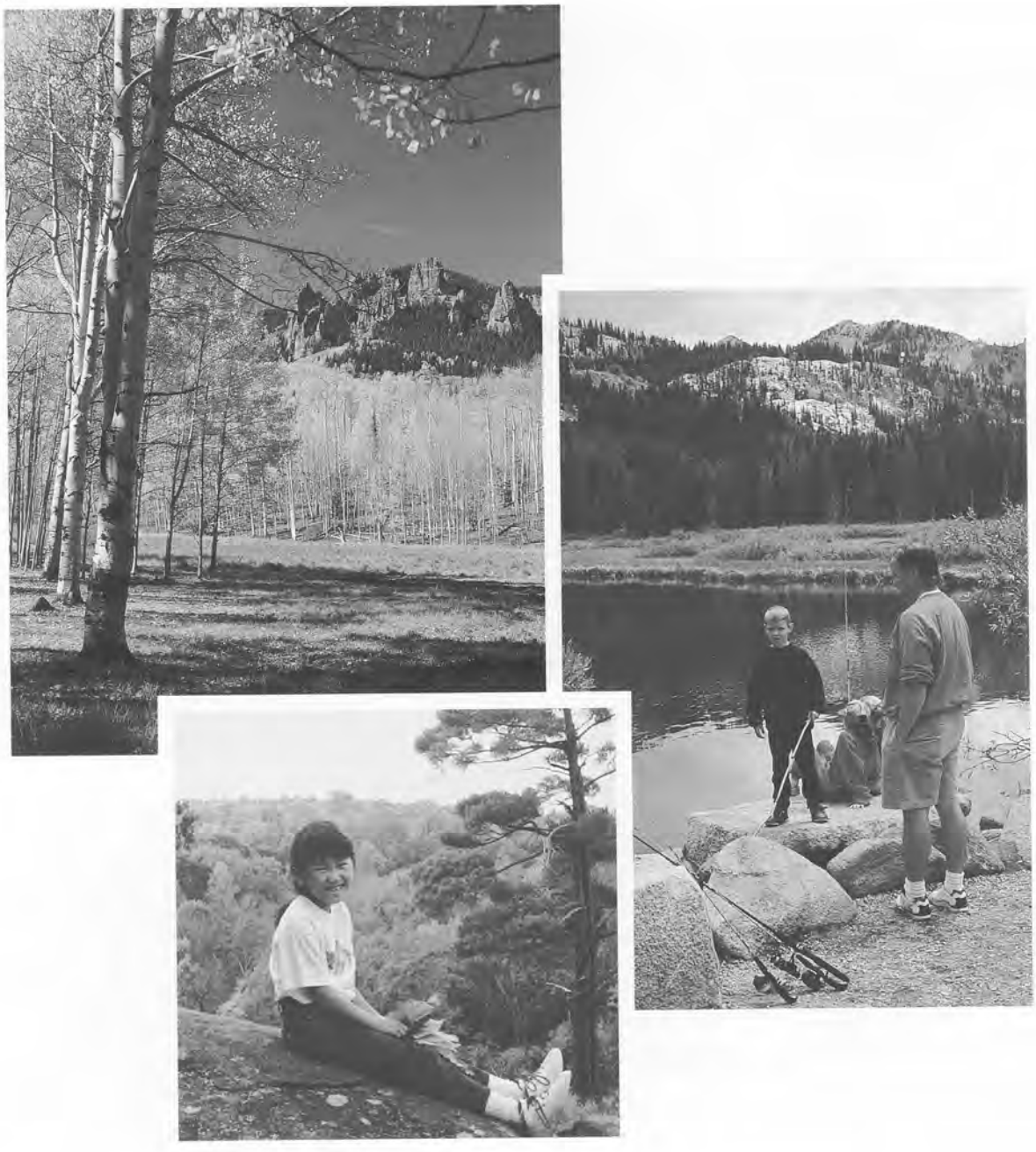
Forest Service

Washington Office

November 2000

Forest Service Roadless Area Conservation

Final Environmental Impact Statement Summary



Acronyms and Abbreviations

ANILCA	Alaska National Interest Lands Conservation Act
ASQ	Allowable Sale Quantity
BBF	Billion board feet
BLM	Bureau of Land Management
BMP	Best Management Practices
CAET	Content Analysis Enterprise Team
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DEIS	Draft Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FEMAT	Forest Ecosystem Management Assessment Team
GIS	Geographic Information System
ICBEMP	Interior Columbia Basin Ecosystem Management Project
LUD	Land Use Designation (Tongass National Forest)
MMBF	Million board feet
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NFS	National Forest System (includes national forests and grasslands)
NOI	Notice of Intent
NMFS	National Marine Fisheries Service
OHV	Off-highway Vehicle
RARE	Roadless Area Review and Evaluation
RARE II	Second Roadless Area Review and Evaluation
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
SAA	Southern Applachian Assessment
TEP	Threatened, Endangered, and Proposed
TEPS	Threatened, Endangered, Proposed, and Sensitive
TLMP	Tongass Land Management Plan
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

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File Code: 1950-3
Date: November 9, 2000

Dear Citizen:

I am pleased to present the Roadless Area Conservation Final Environmental Impact Statement. These volumes describe a strategy for conserving National Forest System inventoried roadless areas and their important values. They contain an analysis of management options and the Forest Service's preferred alternative. I expect to render a final decision on this matter in no sooner than 30 days.

I want to thank all those who participated in this rulemaking. The wealth of insights and experience they provided contributed to improvements in development of the proposal and the analysis of social, economic, and environmental effects.

I remain confident that taking action now to conserve roadless areas through this national effort will result in these lands providing lasting values for future generations. I appreciate your participation in achieving this goal.

Sincerely,

Mike Dombeck

MIKE DOMBECK
Chief

SUMMARY

Introduction

Inventoried roadless areas comprise 58.5[1] million acres, or 31%, of National Forest System (NFS) lands. These areas possess social and ecological values and characteristics that are becoming scarce in an increasingly developed landscape. While NFS inventoried roadless areas represent about 2% of the total landbase of the United States, they provide unique opportunities for dispersed recreation, sources of clean drinking water, and large undisturbed landscapes that offer privacy and seclusion. In addition, these areas provide a bulwark against the spread of nonnative invasive plant species, support a diversity of habitats for native plant and animal species, conserve biological diversity, and provide opportunities for study, research, and education. The preferred alternative is the Agency's recommendation for conserving inventoried roadless areas.

The preferred alternative would prohibit road construction, reconstruction, and timber harvest except for stewardship purposes in inventoried roadless areas. The prohibitions would apply to inventoried roadless areas on the Tongass National Forest, but implementation would be delayed until April 2004 to allow for a transition period for the region. Exceptions to the preferred alternative include road construction and reconstruction required for reserved or outstanding rights, public health and safety, to mitigate environmental damage, and to comply with existing laws.

A Record of Decision and final rule on roadless area conservation will be issued no sooner than thirty days after the final environmental impact statement is released.

Background

Roadless area management became the focus of national attention in 1972 when the Forest Service initiated a review of NFS roadless areas greater than 5,000 acres to determine their suitability for inclusion in the National Wilderness Preservation System. Additional reviews have been conducted through other assessments and the land and resource management planning process as required by the National Forest Management Act of 1976. On many NFS lands, roadless area management has been a major point of conflict in the adoption of land management plans. This controversy continues today, accompanying most proposals to harvest timber, build roads, or otherwise develop these areas. The volume of appeals, litigation, and congressional debate over the last 20 years illustrates the importance that many Americans attach to the remaining roadless portions of NFS lands.

Integral to the debate over management of inventoried roadless areas is the dispute over management of the National Forest System Transportation System. Currently, the Forest Service manages 386,000 miles of road. The backlog on maintenance and reconstruction

[1] Minor descrepancies among figures cited in the text or tables are due to rounding.

of the existing road system exceeds $8.4 billion. Many people inside and outside the Forest Service question the wisdom of building new roads in inventoried roadless areas when such a large maintenance backlog on the existing road system persists.

Purpose, Need and Decision to be Made

Given the many values of inventoried roadless areas, the impact of development to those values, and the history of controversy surrounding their management, the Agency determined the need for national-level rulemaking to conserve these areas. The purpose of this action is to prohibit activities that pose the greatest risk to the social and ecological values of inventoried roadless areas. The Forest Service analyzed a number of alternatives to limit road construction, reconstruction, and timber harvest, because these activities occur on forests and grasslands throughout the nation, have the greatest likelihood of altering landscapes, often cause significant landscape fragmentation, and often result in immediate, long-term loss of roadless characteristics. In addition, the Forest Service has developed alternatives for the Tongass National Forest because of its unique social and economic conditions. The Tongass National Forest is unique due to its 1999 Land and Resource Management Plan revision, which led to 82% of the forest with land use designations that prohibit or limit road construction and reconstruction. The Tongass is also subject to special requirements under the Tongass Timber Reform Act.

In light of this purpose and need, the responsible official must make the following key decisions:

- Should road construction, reconstruction, and timber harvest be prohibited in National Forest System inventoried roadless areas?
- Should the proposed national prohibitions be applied to the Tongass National Forest or modified to meet the unique situation on the Tongass?

Public Involvement, Scope and Issues

On October 13, 1999, President Clinton directed the Forest Service to undertake an open and public process to “provide appropriate long-term protection for most or all of these currently inventoried ‘roadless’ areas, and to determine whether such protection is warranted for any smaller ‘roadless’ areas not yet inventoried.” The Forest Service released a Notice of Intent on October 19, 1999, outlining alternative options to conserve roadless areas. The Notice of Intent (64 FR 56306) drew about 16,000 people to 187 public meetings and elicited more than 517,000 responses by the time the draft environmental impact statement (DEIS) was published. On May 10, 2000, the Forest Service released a proposed rule and DEIS. Over the course of the next several months, the Agency held two sets of public meetings – the first to explain the content of the DEIS, and the second to receive public comment. All told, more than 23,000 people attended more than 400 public meetings. The DEIS generated more than 1.1 million responses.

The Forest Service identified and summarized these responses into six major issue categories:

1. Public access;
2. Identification of other unroaded areas;
3. Exemptions and exceptions;
4. Environmental effects;
5. Local involvement; and
6. The effect on communities with strong natural resource affiliations.

Under each of these categories, a variety of opinions were expressed. For example, under Public Access, some suggested national prohibitions on all or certain activities, while others advocated that decisions on access be made at the local level. These issues have been used to guide the process in the following ways:

- Determine the scope of the proposal;
- Develop a range of alternatives;
- Direct the analysis of potential environmental, social and economic effects;
- Identify possible mitigation; and
- Insure that the Agency is operating within legal authorities.

Based on public comment and further analysis, the Forest Service developed and analyzed several alternatives.

Alternatives Considered in Detail

The Forest Service developed two sets of alternatives: 1) four alternatives, including a No Action Alternative, that cover the range of possible prohibited activities in inventoried roadless areas consistent with the stated purpose and need; and 2) four alternative ways to apply the prohibitions to the Tongass National Forest.

The Forest Service had also analyzed a third set of alternatives, procedural alternatives (A through D) in the DEIS. Analysis of comments on the DEIS for the Roadless Rule showed that there was confusion about the procedural alternatives. Public comments on the proposed Planning Regulations and Agency comments on the DEIS for the Roadless Rule suggested that the procedures for roadless area protection were best suited for the Planning Regulations. On further review, most of the roadless area characteristics identified in the DEIS and proposed Roadless Rule were similarly required by the Planning Regulations. Therefore, the Forest Service determined that the procedures described in the Roadless Rule should be an explicit part of the plan revision process, and addressed them at 36 CFR 219.9(b)(8) of the final Planning Regulations. By making small changes to the Planning Regulations, alternative procedures were not needed as a part of this Roadless Rule. Therefore, the procedural alternatives discussed in the Draft EIS were removed from the FEIS.

In the Record of Decision and final rule, the responsible official will select one prohibition alternative and one Tongass alternative. If the responsible official chooses to treat the Tongass the same as every other national forest, the official would select the alternative that does not exempt the Tongass (Tongass Not Exempt). If the decision is to treat the Tongass differently than other national forests, one of the other Tongass alternatives would be chosen. Mitigation measures have also been identified that could be used to reduce economic and social impacts of the final rule. Any of these mitigation measures could be chosen to mitigate the effects of the selected alternative.

In any case, the final rule would not:

- Suspend or modify any existing permit, contract, or other legal instrument authorizing the occupancy and use of National Forest System land;
- Compel the amendment or revision of any land and resource management plan; or
- Suspend or modify any project or activity decision made prior to the effective date of the final rule.

Prohibition Alternatives

The four alternatives listed below describe the activities that would not be allowed in approximately 58.5 million acres of inventoried roadless areas (fewer acres if the Tongass National Forest is not included in the final rule). Depending on which alternative is selected, the prohibitions on road construction and reconstruction and timber harvest would apply to the entire area within the boundaries of inventoried roadless areas, including those portions that contain existing roads.[2]

Alternative 1

No Action; No Prohibitions

No rule prohibiting activities in inventoried roadless areas would be issued. Road construction and reconstruction would continue to be restricted only where land management plan prescriptions prohibit such activity (approximately 24.2 million acres).[3] Future proposals for road construction and reconstruction would be considered on a case-by-case basis at the project level using public comment and under NEPA requirements. There would be no restrictions on timber harvest imposed by this alternative. This alternative also establishes a benchmark against which the effects of the other alternatives are compared.

[2] As described in the DEIS, the prohibition alternatives would have applied to the "unroaded portion of an inventoried roadess area." Public comments indicated that this concept was confusing and would be difficult to apply and administer consistently. The effects analysis in the DEIS was actually based on application of the prohibitions to entire inventoried roadless areas, since data were not specific to roaded or unroaded portions. Therefore, both the concept and the definition of "unroaded portion" were deleted from the alternatives and analysis in the FEIS.

[3] The land allocations and management prescriptions for these areas could be reconsidered during plan revision.

Alternative 2

Prohibit Road Construction and Reconstruction Within Inventoried Roadless Areas

Road construction and reconstruction activities, including temporary road construction, would be prohibited in inventoried roadless areas. Road reconstruction activities are those that result in realignment or improvement of an existing road. These prohibitions would become effective upon implementation of the final rule. There would be no restrictions on timber harvest imposed by this alternative.

Alternative 3

Prohibit Road Construction, Reconstruction, and Timber Harvest Except for Stewardship Purposes Within Inventoried Roadless Areas

Road construction and reconstruction activities, including temporary road construction, would be prohibited in inventoried roadless areas. Timber harvest would be prohibited except for stewardship purposes. Stewardship purpose timber harvest can only be used where it maintains or improves roadless characteristics and:

- Improves threatened, endangered, proposed or sensitive species habitat;
- Reduces the risk of uncharacteristic wildfire effects; or
- Restores ecological structure, function, processes, and composition.

These prohibitions would become effective upon implementation of the final rule.

Personal-use harvest including firewood and Christmas trees would be allowed. In addition, tree cutting may occur incidental to other management activities such as trail construction or maintenance, removal of hazard trees adjacent to classified roads for public health and safety reasons, fire line construction for wildland fire suppression or control of prescribed fire, or for survey and maintenance of property boundaries. Mechanical fuel treatments such as crushing, piling, or limbing would be permitted.

Alternative 4

Prohibit Road Construction, Reconstruction and All Timber Cutting Within Inventoried Roadless Areas

Road construction and reconstruction activities, including temporary road construction, would be prohibited in inventoried roadless areas. Timber cutting would be prohibited for commodity or stewardship purposes. Personal use harvest, including firewood and Christmas trees, would be allowed. Limited tree cutting may occur incidental to other management activities such as trail construction or maintenance, hazard tree removal adjacent to classified roads for public health and safety reasons, fire line construction for wildland fire suppression or control of prescribed fire, or for survey and maintenance of property boundaries. Mechanical fuel treatments such as crushing, piling, or limbing

would be permitted, but under this alternative, area-wide tree cutting for fuel reduction purposes would be prohibited. These prohibitions would become effective upon implementation of the final rule.

Under this alternative, the responsible official may authorize an exception to the prohibition on timber harvest if: 1) such harvest is necessary to prevent degradation or loss of habitat for a threatened, endangered, or proposed species under the Endangered Species Act; or 2) such harvest is needed to promote recovery of a threatened or endangered species.[4]

Exceptions Common to All Action Alternatives

Under all action alternatives, the responsible official may authorize road construction or reconstruction in any inventoried roadless area when:

- A road is needed to protect public health and safety in cases of an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause the loss of life or property;
- A road is needed to conduct a response action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to conduct a natural resource restoration action under CERCLA, section 311 of the Clean Water Act, or the Oil Pollution Act;
- A road is needed pursuant to reserved or outstanding rights, or as provided for by statute or treaty; or
- Realignment is needed to prevent irreparable resource damage by a classified road. The road must be deemed essential for public or private access, natural resource management, or public health and safety, and the resource damage associated with the road cannot be corrected by maintenance.

Potential Social and Economic Mitigation Measures

In response to public comments on the DEIS, mitigation measures were developed to ease some of the potential social and economic impacts the various alternatives may cause. The mitigation measures may be applied to any of the action alternatives.

The final rule may or may not include some or all of the following mitigation measures. If selected in the final rule, the responsible official may authorize road construction or reconstruction in any inventoried roadless area when:

- Reconstruction is needed to implement road safety improvement projects on roads determined to be hazardous on the basis of accident experience or accident potential;

[4] It is not anticipated that the exception for threatened, endangered, and proposed species would be used frequently or for large-scale projects, but rather for conservation of specific habitat components necessary for continued species viability where a clear need is identified.

- The Secretary of Agriculture determines that a Federal Aid Highway project, authorized pursuant to Title 23 of the United States Code, is in the public interest or is consistent with the purposes for which the land was reserved or acquired and no other feasible alternative exists; and
- A road is needed for prospective mineral leasing activities in inventoried roadless areas.

In conjunction with, but independent of this rule, the Chief of the Forest Service intends to work with affected States and communities and to pursue funds to help them respond to economic changes that may result from implementation of a decision. The Chief of the Forest Service may implement one or more of the following provisions of an economic transition program for communities most affected by changes in management of inventoried roadless areas:

- Provide financial assistance to stimulate community-led transition programs and projects in communities most affected by changes in roadless area management;
- Through financial support and action plans, attract public and private interest, both financial and technical, to aid in successfully implementing local transition projects and plans by coordinating with other Federal and State agencies; and
- Assist local, State, Tribal and Federal partners to work with communities most affected by the final roadless area decision.

Tongass National Forest Alternatives

The four Tongass National Forest alternatives[5] detail different ways of applying the prohibitions to the Tongass National Forest. The exceptions common to all action alternatives described previously would also apply to these action alternatives.

Tongass Exempt

Alternative Selected for the Rest of National Forest System Lands Would Not Apply to the Tongass National Forest

Under this alternative, the Tongass National Forest would be exempt from the Roadless Rule. Land management would continue as outlined in the 1999 Record of Decision for the Tongass Land Management Plan revision.[6] Future proposals for road construction and reconstruction would be considered on a case-by-case basis where allowed by the current land management plan, with roadless characteristics and values analyzed at the project level and raised as an issue.

[5] Tongass alternatives for the FEIS are different from the ones identified in the DEIS because the procedures were addressed in the new 36 CFR 219 Planning Regulations.
[6] The land allocations and management prescriptions for these areas could be reconsidered during plan revision.

Tongass Not Exempt

Alternative Selected for the Rest of National Forest System Lands Would Apply to the Tongass National Forest

Under this alternative, the inventoried roadless areas on the Tongass would not be exempt from the final rule and decision. Rather, the alternative selected for the rest of the National Forest System would apply to the Tongass National Forest.

Under an optional mitigation measure, the Agency may choose to delay implementation of the prohibitions in inventoried roadless areas on the Tongass until April 2004 to allow communities most affected by the final roadless area decision to adjust to changes in management of inventoried roadless areas.

Tongass Deferred

No Alternatives Selected at This Time; Determine Whether Road Construction Should be Prohibited in Inventoried Roadless Areas on the Tongass as Part of the 5-Year Plan Review

No alternatives would be applied on the Tongass National Forest at this time. Road construction, reconstruction, and timber harvest in inventoried roadless areas would continue as outlined in the 1999 Record of Decision for the Tongass Land Management Plan. The responsible official for the Tongass would determine whether the prohibition against road construction and reconstruction, including temporary road construction, should apply to any or all of the inventoried roadless areas on the Tongass at the time of the 5-year review of the April 1999 Tongass Land and Resource Management Plan.

Tongass Selected Areas

Prohibit Road Construction and Reconstruction in Old-growth Habitat, Semi-Remote Recreation, and Remote Recreation Land Use Designations, and LUD IIs within Inventoried Roadless Areas on the Tongass

Road construction and reconstruction activities, including temporary road construction, would be prohibited only within the inventoried roadless areas in the Old-growth Habitat, Semi-Remote Recreation, and Remote Recreation land use designations, and LUD IIs.[7]

[7] The LUD II designation is assigned to 12 areas that were allocated for special management by the Tongass Timber Reform Act. The desired condition in these areas is that of an extensive and generally unmodified natural environment that retains its wildland character.

The Preferred Alternative

The preferred alternative combines:

Alternative 3 with
Selected Social and Economic Mitigations
Prohibit Road Construction, Reconstruction, and Timber Harvest Except for Stewardship Purposes Within Inventoried Roadless Areas, While Excepting Road Reconstruction Needed for Road Safety Improvements, and Federal Aid Highway Projects

Tongass Not Exempt with
Selected Social and Economic Mitigations
Alternative Selected for the Rest of National Forest System Lands Would Apply to the Tongass National Forest, Beginning in April 2004

Alternative 3, with Social and Economic Mitigations - Road construction and reconstruction activities (including temporary road construction) and timber harvest except for stewardship purposes would be prohibited on 49.2 million acres of inventoried roadless area upon implementation of the final rule. This would increase to 58.5 million acres in April 2004 as the prohibition on road construction and reconstruction and timber harvest except for stewardship purposes are implemented on the Tongass National Forest.

Stewardship purpose timber harvest could only be used where it maintains or improves roadless characteristics and:

- Improves threatened, endangered, proposed or sensitive species habitat;
- Reduces the risk of uncharacteristic wildfire effects; or
- Restores ecological structure, function, processes, or composition.

Exceptions to the prohibitions identified in the DEIS are included, and would allow the responsible official to authorize road construction or reconstruction in any inventoried roadless area when:

- A road is needed to protect public health and safety in cases of an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause the loss of life or property;
- A road is needed to conduct a response action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to conduct a natural resource restoration action under CERCLA, section 311 of the Clean Water Act, or the Oil Pollution Act;
- A road is needed pursuant to reserved or outstanding rights, or as provided for by statute or treaty; or

- Realignment is needed to prevent irreparable resource damage by a classified road. The road must be deemed essential for public or private access, natural resource management, or public health and safety, and the resource damage associated with the road cannot be corrected by maintenance.

The following social and economic mitigation measures, in the form of additional exceptions, have also been incorporated. The responsible official may authorize road construction or reconstruction in any inventoried roadless area when:

- Reconstruction is needed to implement road safety improvement projects on roads determined to be hazardous on the basis of accident experience or accident potential; or
- The Secretary of Agriculture determines that a Federal Aid Highway project, authorized pursuant to Title 23 of the United States Code, is in the public interest or is consistent with the purposes for which the land was reserved or acquired, and no other feasible alternative exists.

In conjunction with, but independent of this rule, the Chief of the Forest Service intends to work with affected States and local communities to pursue funds to assist with the economic transition resulting from implementation of the final Roadless Rule. The Agency's success in securing appropriations for these purposes would have a direct bearing on its ability to actually implement the following programs. Under these mitigations, the Chief of the Forest Service may implement one or more of the following provisions of an economic transition program for communities most affected by changes in management of inventoried roadless areas:

- Provide financial assistance to stimulate community-led transition programs and projects in communities most affected by changes in Roadless Area Management;
- Through financial support and action plans, attract public and private interest, both financial and technical, to aid in successfully implementing local transition projects and plans by coordinating with other Federal and State agencies; and
- Assist local, State, Tribal and Federal partners to work with communities most affected by the final roadless area decision.

Tongass Not Exempt, With Social and Economic Mitigations - The Tongass would be treated the same as all other forests in the National Forest System. Inventoried roadless areas on the Tongass would not be exempt from the prohibitions selected in the final rule. The prohibition on new road construction and reconstruction and timber harvest except for stewardship purposes, would be applied to inventoried roadless areas on the Tongass. Implementation of the prohibitions would commence in April 2004, as provided for by the social and economic mitigation measure to provide a transition period for communities most affected by changes in management of inventoried roadless areas on the Tongass.

Final Rule and Record of Decision

While this document describes the preferred alternative, the Council for Environmental Quality implementing regulations for the National Environmental Policy Act require a 30 day wait period between publication of the FEIS and publication of the final decision. Therefore, the final decision will be documented in a Record of Decision and final rule,

which will be published no sooner than 30 days after publication of the Notice of Availability of the FEIS. The final decision could be the same as this preferred alternative, or it could be a different combination of the alternatives and social and economic mitigation measures.

Alternatives Considered but Eliminated From Detailed Study

In addition to the alternatives described above, other issues, such as prohibitions on activities other than road construction, reconstruction, and timber harvest; geographical scope; and exemptions or exclusions for specific inventoried roadless areas, were raised by the public. Some suggested actions were outside the scope of providing protection for inventoried roadless areas. Other suggested actions were already represented by one or more of the alternatives considered in detail or were determined to be components that would cause unnecessary environmental harm. Therefore, a number of suggested actions were considered but dismissed from detailed consideration.

Affected Environment and Environmental Consequences

This section, as well as Tables S-1 and S-2 at the end of this document, summarizes the affected environment and the physical, biological, social, and economic effects that may occur from implementing the different alternatives.

Overview of Affected Environment

Inventoried Roadless Areas

Of the 192 million acres of NFS land, 58.5 million acres are inventoried as roadless. These acres are spread throughout 120 national forests located in 38 States and the Commonwealth of Puerto Rico. More than 96% of these areas are located west of the 100th meridian, mostly concentrated in northern California, Oregon, Washington, Southeast Alaska, and in Rocky Mountain States (Figure S-1). Road construction and reconstruction are already prohibited on 24.2 of the 58.5 million acres of inventoried roadless areas under current land management direction, whereas 34.3 million acres allow road construction and reconstruction. Most of the analysis in this section is directed at that remaining 34.3 million acres.

In general, inventoried roadless areas are not near large urban areas. According to 1990 census data, 10% of the inventoried roadless areas fall within 60 miles of a city with a population of 50,000 or greater. Nonetheless, the 192 large cities near this 10% contain approximately one-third of the nation's urban population. Thus, a small percentage of inventoried roadless areas receive a disproportionately high level of use.

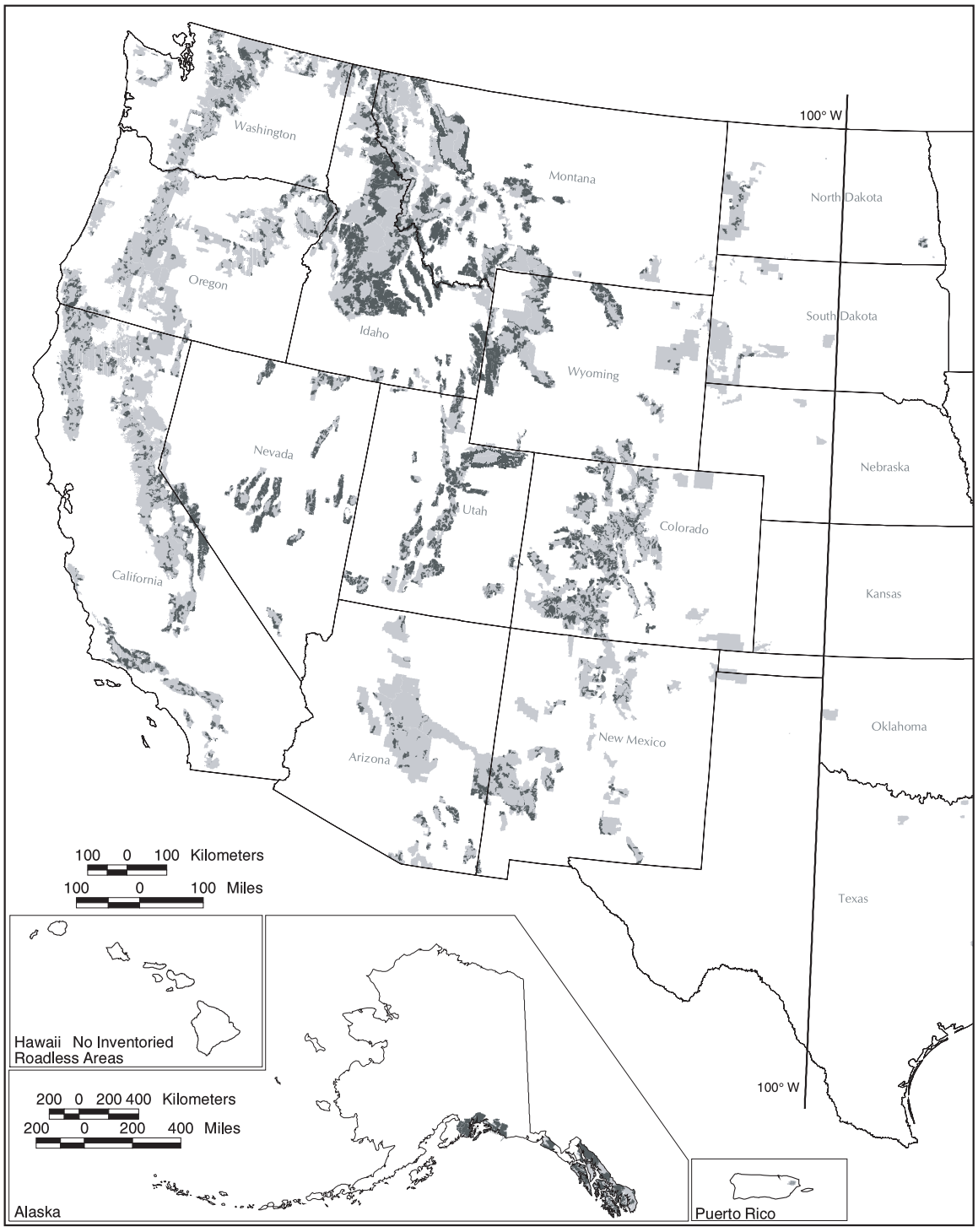

Figure S-1. Inventoried Roadless Areas on National Forest System Lands, Western United States.

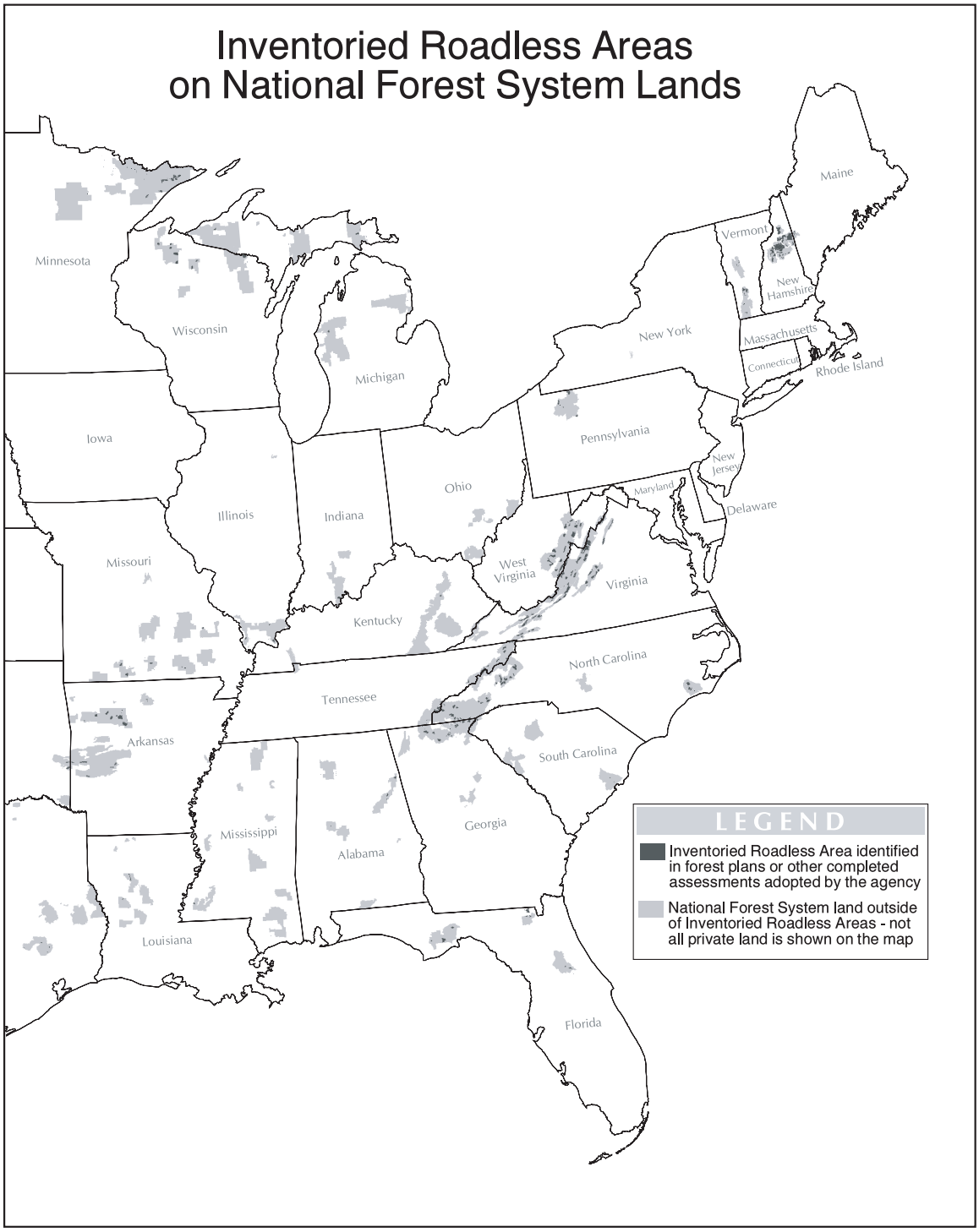

Figure S-1. Inventoried Roadless Areas on National Forest System Lands, Eastern United States.

Social and Economic Setting

Over the last two decades, the United States population has grown about 1% per year and continues to increase at a steady rate. Overall population growth has been greatest in the Southeast, California and south central United States, and it has been centered in urban areas. In contrast, the percent of the U.S. population residing in rural areas has declined. In the year 2000, 80% of the U.S. population is estimated to live in urban or suburban areas compared to 75% in 1990.[8]

Although the percentage of rural populations has been declining overall, many rural counties containing NFS lands have been increasing in population. Approximately one-third of the total population increase that occurred in the United States between 1980 and 1999 occurred in Counties that contain NFS lands. This trend is expected to continue.

Population growth combined with economic growth leads to increasing demands for natural resources, such as timber, minerals, water, and other forest products, for the material to produce more finished goods and services. At the same time, demand for recreation, open space, scenic quality, clean air and water, and biological diversity is also increasing. These demands must be met from a finite land base.

Effects of the Prohibition Alternatives

National Forest System Roads

The Forest Service maintains and administers approximately 386,000 miles of roads on NFS lands. These roads serve many uses and join with County, State, and national highways to connect rural communities and urban centers with national forests and grasslands. Recreation is the single largest activity supported by the National Forest transportation system, accounting for 90% of daily traffic. About 20% (76,000 miles) of Forest Service roads are maintained for passenger cars. Another 57% (223,000 miles) are designed and maintained for high-clearance vehicles. The remaining 23% (87,000 miles) are single-use roads (for example, fire access) that are generally closed to the public. The Forest Service estimates that about 20 total jobs are generated per $1 million spent on road construction or reconstruction. Average costs to build roads for harvesting timber range from $50,000 to $60,000 per mile, while average reconstruction costs range from $8,000 to $16,000 per mile.

The Forest Service estimates that approximately 232 miles of roads would be constructed or reconstructed in inventoried roadless areas annually between years 2000 and 2004 if there is no rule that prohibits these activities. Of those, approximately 125 miles would be constructed or reconstructed to support timber harvesting; 107 miles would be constructed or reconstructed for other various activities. In general, the magnitude of environmental effects that could occur corresponds to the amount of road construction, reconstruction, and the other activities associated with those roads. If all of the timber and non-timber roads were constructed or reconstructed in inventoried roadless areas, annual costs would range

[8] USDC, Bureau of the Census. 1996. Land Area, Population, and Density for States and Counties; USDA Forest Service 1999. Demographics and Natural Resources. Programs and Legislation, Washington, DC.

from $12.2 to $13.4 million. Using this range of costs, direct jobs associated with road activities in inventoried roadless areas would range from 122 to 134 annually, while total jobs would range from 244 to 268 annually.

Under Alternatives 2 through 4, road construction and reconstruction would only be permitted under the exceptions. In this case, miles of road construction and reconstruction in inventoried roadless areas would be reduced from 232 to 59 miles (0 on the Tongass) annually. The Forest Service estimates that the alternatives would affect between 84 and 93 direct jobs and between 171 and 186 total jobs directly related to road construction activities in inventoried roadless areas per year. If the mitigation for Federal Aid Highways is added, the average annual miles of road constructed per year increases from 59 to 60 miles; if the mitigation measure allowing roads for prospective mineral leasing is added, the average increases to 72 miles per year.

Timber Harvest

The Forest Service plans to offer about 3.3 billion board feet of timber per year on NFS lands from years 2000 to 2004 of which 220 million board feet, or 7%, of the timber offer is planned in inventoried roadless areas. More than 45% of the projected offer in inventoried roadless areas is expected to come from inventoried roadless areas on the Tongass National Forest. Of the 220 million board feet of planned offer in inventoried roadless areas, 147 million board feet is expected to be purchased and harvested. The harvest would include both commodity-purpose and stewardship-purpose sales. The timber would be removed by skidders, helicopters, or cable yarding methods using existing or newly constructed or reconstructed roads.

Under Alternative 1 (No Action), all 147 million board feet could be harvested annually from inventoried roadless areas with 124 million harvested for commodity-purpose sales and 20 million board feet harvested for stewardship purposes. This harvest would require construction or reconstruction of approximately 89 miles of classified roads and about 36 miles of temporary roads annually. Prohibiting road construction and reconstruction in inventoried roadless areas (Alternative 2) would reduce annual harvest in inventoried roadless areas over the next 5 years by approximately 73% (from 147 million board feet to 39 million board feet). Prohibiting road construction, reconstruction, and timber harvesting except for stewardship purposes (Alternative 3) would reduce timber harvest approximately 86% (from 147 million board feet to 20 million board feet per year). Prohibiting road construction, reconstruction, and timber harvesting (Alternative 4) would eliminate all timber harvest in inventoried roadless areas (from 147 million board feet to zero per year).

The Forest Service estimates that a national prohibition on road construction and reconstruction (Alternative 2) in inventoried roadless areas would affect 607 jobs directly associated with timber harvest nationwide (representing nearly $28 million in income), with approximately 1,054 total jobs (direct, indirect, and induced jobs) affected. Compared to the No Action Alternative, jobs would decline about 2% under Alternatives 2 through 4.

Because approximately 73% of the average annual harvest in inventoried roadless areas would be reduced by a road construction and reconstruction prohibition, impacts associated with additional prohibitions on timber harvesting would be proportionately small. Specifically, prohibiting timber harvest except for stewardship purposes in inventoried roadless areas (Alternative 3) could affect 730 direct jobs and 1,273 total jobs. Prohibiting all timber harvest in inventoried roadless areas (Alternative 4) could affect 886 direct jobs and 1,608 total jobs.

Estimated economic impacts do not account for potential substitute harvest from other ownerships, which could offset some of the economic impacts. The environmental impacts associated with timber harvesting and associated road construction and reconstruction could be transferred from NFS lands to private or foreign lands if substitution occurs.

Physical Resources

Water, soil, and air resources[9] are the foundation that supports all other resources, characteristics, and values. There are more than 2,000 major watersheds in the United States and Puerto Rico, of which 914 contain some land managed by the Forest Service. These watersheds provide 14% of the total water flow in the entire nation and 33% of the water flow in the West. Of the watersheds on NFS lands, 661 contain inventoried roadless areas and 354 of those watersheds serve as source areas of drinking water used by millions of people across the nation. Proper watershed management is critical to the health of people throughout the United States. Maintaining and improving air quality is another important goal in managing national forests and grasslands. One key measure of air resources is the status of Class I air quality areas designated by the Clean Air Act. Of the 163 Class I areas in the nation, 88 are on NFS lands, with many close to inventoried roadless areas. Dust, smoke, and emissions from vehicles can all impact air quality whether generated from within NFS lands or from outside sources that drift into lands managed by the Forest Service.

The amount of ground disturbing activity caused by road construction and timber harvest is a good way to estimate effects on water, soil, and air resources. Changes in water yield, flood flows, sediment volumes, and water quality are examples of measures used to assess effects on these resources. The likelihood of increasing landslide activity due to road building or timber harvest is of particular concern in some areas in the West. Fire activity, especially large, severe, wildland fires, is also a good indicator of effects on these key physical resources. Alternatives with higher levels of road construction, timber harvest, and large wildfires typically have the most effects on water, soil, and air resources. Many of the potential effects of these activities are mitigated through strict implementation of best management practices to protect water, soil, and air resources. However, concern still exists since these practices cannot prevent all impacts, particularly from large storm and fire events.

[9] Air resources include visibility; quality components such as dust, smoke, pH, and nitrogen oxide; and atmospheric components including global climate change and carbon sequestration.

Alternative 1 (the No Action Alternative) has the highest levels of timber harvest and road construction, resulting in the most potential negative effects on water, soil, and air resources. Alternative 2 has about 75% fewer likely impacts than Alternative 1 based mainly on lower road construction and reconstruction and associated timber harvest activity. Alternative 3 has still fewer potential negative effects due to further reduction in timber harvest although reductions in road construction and reconstruction remain constant. Alternative 4 has the fewest potential overall negative effects on water, soil, and air resources since all commercial and stewardship timber harvesting is prohibited in inventoried roadless areas. Under this alternative, however, the chance of more large wildfires has the potential to cause substantial localized impacts on burned areas and to water, soil, and air resources downstream and downwind.

Biodiversity

Inventoried roadless areas provide large, relatively undisturbed blocks of habitat for a variety of terrestrial and aquatic wildlife and plants, including hundreds of threatened, endangered, or sensitive species. Many inventoried roadless areas function as biological strongholds and refuges for a number of species, and they play a key role in maintaining native plant and animal communities and biological diversity.

The No Action Alternative would result in continued loss of biodiversity because of timber harvest and road related fragmentation, disturbances, and nonnative species invasions. Roads in these areas may contribute to forest fragmentation by dividing large landscapes into smaller patches and converting interior forest habitat into edge habitat. They also enable many activities, such as timber harvest, which can increase fragmentation and degrade habitat, along with increasing the overall level of human disturbance. Roads may also be avenues for invasion by nonnative plant species. At the same time, roads can provide access for activities that may have ecologically beneficial effects, such as fuels treatment, wildlife habitat improvements, and control of insect and disease outbreaks.

Alternatives 2 through 4 provide for greater biodiversity conservation by prohibiting road construction and reconstruction, thus avoiding road-related, potentially adverse effects on native plant and animal communities and landscape patterns compared with the No Action Alternative. There may be somewhat more conservation of biodiversity under those alternatives that restrict timber harvest activities (Alternative 3 and 4) than under Alternative 2. The stewardship timber harvest allowed under Alternative 3 would provide for restoration types of timber harvest that could help sustain biodiversity in some areas. Under Alternative 4, an exception to the prohibition on tree cutting could be authorized when deemed necessary to protect and conserve threatened, endangered, and proposed species. This alternative would result in additional but small increases in environmental benefits. However, the potential exists for some adverse environmental effects due to restrictions on stewardship harvest that may be needed for habitat restoration.

Recreation

National Forest System lands support a vast array of recreational activities, ranging from hiking in remote areas to snowmobiling on groomed trails to camping in developed sites. Demand for dispersed, developed, and road-based recreation is increasing. Visitor demand for outfitting- and guiding-assisted recreation experiences and ecotourism services is also increasing. Inventoried roadless areas are mainly characterized by recreation classes appropriate for dispersed recreation activities and few, if any, developed or road based recreation opportunities. These classes include Primitive, Semi-Primitive Non-Motorized, and Semi-Primitive Motorized.

Alternative 1 could allow developed and road based recreation activities to expand into inventoried roadless areas if such activities are consistent with forest plans. Continued road construction associated with timber harvesting and other resource management activities in inventoried roadless areas would reduce the supply of areas suitable for dispersed recreation. Under Alternatives 2 through 4, the availability of inventoried roadless areas for forest visitors seeking primitive and semi-primitive recreation opportunities would remain high. Developed and road based recreation opportunities, normally associated with Roaded Natural, Rural, and Urban recreation classes would no longer be able to expand into inventoried roadless areas. Thus, all future increased demand for developed and road based recreation would be met and concentrated in areas already available for development. Trail construction and reconstruction would not be prohibited. Prohibiting road construction and reconstruction in inventoried roadless areas would also not affect the availability of existing motorized recreation opportunities.

Fuels Management and Fire Suppression

Because of the cumulative effects of past management practices and decades of wildfire suppression, million of acres of national forests are currently outside their historical fire regimes. Past logging and grazing have added to this departure from the natural regime. Of the 192 million acres of NFS lands, nearly 67 million acres are at moderate to high risk of uncharacteristic wildfires that could threaten communities, soil, water, air, or habitat. Nationally, the breakdown is 38 million acres at moderate risk and 29 million acres at high risk within short fire return interval areas.

Of the 58.5 million acres of inventoried roadless areas, 14 million acres occur in the dry ponderosa pine forest and shrubland types in the Western United States. Of this 14 million acres, an estimated 7 million acres are at moderate risk and 4 million at high risk from wildfires causing uncharacteristic wildfire effects. Of the 14 million acres, 6.5 million acres can be prescribed burned without any mechanical pretreatment, and approximately 7.5 million acres may need mechanical pretreatment (understory thinning, harvesting, or hand piling of fuels, for example) before prescribed burning can be safely applied on a regular basis.

There are many factors limiting the amount of fuel management work completed in inventoried roadless areas, including funding, the number of personnel available to complete fuel treatment planning and implementation, and the fact that the greatest level of fuel treatment will occur outside of inventoried roadless areas where the occurrence of priority treatment areas is higher. In 1999, 1.4 million acres or less than 1% of NFS lands received fuel treatments, and very little of this fuel management work occurred in inventoried roadless areas. Rather, most fuel management dollars have been and will continue to be spent treating acres outside of inventoried roadless areas where natural resource values or potential threats to human communities are the highest. These areas include the wildland-urban interface, threatened and endangered species habitat, and readily accessible municipal watersheds. Given these priorities, it is assumed that extensive fire hazard reduction work would not begin in inventoried roadless areas for at least 20 years.

Under the No Action Alternative, approximately 19,000 of the 7.5 million acres of forest needing mechanical treatment could be treated annually using timber harvest for years 2000 to 2004. These numbers are likely high, however, given that top priority for treatment is in the wildland-urban interface, threatened and endangered species habitat, and readily accessible municipal watersheds. Prohibiting road construction and reconstruction would result in a moderate decrease in the amount of forested acres of NFS land that could be treated by both commodity purpose and stewardship timber sales (8,000 acres annually). This amount would decrease with additional limits or prohibitions on timber harvest. Lack of road access would also, in some cases, lower productivity of fuel management work crews, indirectly raising per acre unit costs; however, treatments could still be applied. Since World War II, the Agency has not constructed roads solely in support of fuel management or fire suppression projects. Roads are constructed for other purposes and subsequently used to access fuel treatment areas. If road construction and maintenance costs were added to the fuel treatment costs, the increase would likely be higher than the commodity value of the resources protected.

The overall potential for a wildfire causing uncharacteristic wildfire effects is greater outside of inventoried roadless areas than within them. A wildland fire ignition, regardless of cause, is nearly two times more likely to occur outside of an inventoried roadless area, and a human caused wildfire is nearly five times as likely to occur there. Ninety-eight percent of the 1,500 wildfires that annually occur in inventoried roadless areas are controlled at less than a thousand acres in size. Approximately 17 fires escape initial efforts at fire control and become large (1,000 acres or more). These large fires are responsible for more than 90% of the 160,000 acres that are expected to burn each year in inventoried roadless areas. The prohibition on road construction and reconstruction was determined to have little effect on the current fire suppression program within inventoried roadless areas.

Locatable, Leasable and Salable Mineral Development

Minerals on Federal lands are classified as locatable (metallic and nonmetallic minerals subject to appropriation under the General Mining Law of 1872, as amended), leasable (phosphate and energy resources such as oil, gas, coal, and geothermal that can be appropriated under one of several mineral leasing acts), and salable (sand, stone, gravel, pumice, cinders, and clay). Exploration and development of locatable mineral resources are non-discretionary activities, meaning that the Forest Service cannot prohibit reasonably necessary activities associated with the exploration, prospecting, or development of valuable mineral deposits. Currently, there is a trend of decreasing exploration and development of domestic locatable mineral resources. Exploration and development of leasable mineral resources is at the discretion of the Bureau of Land Management (BLM), generally after it obtains Forest Service consent or approval. Exceptions are gilsonite, sodium, and phosphate, which may be leased without Forest Service concurrence. Demands for certain leasable minerals such as coal and oil and gas are growing due to increased consumption. Exploration for and development of salable minerals on NFS lands is at the discretion of the Forest Service. The Forest Service is the principal user of salable minerals from borrow pits on NFS lands. The Agency develops borrow pits to obtain surfacing material for construction and maintenance of forest system roads. Development of salable mineral sites generally occurs incidental to new road construction or reconstruction.

Under the No Action Alternative, mineral operations would be subject to existing authorities. Management of mineral resources in inventoried roadless areas would not change from current practices. Mineral activity on NFS lands would continue to depend on such factors as market conditions, environmental regulations, tax policies, technological advances, and mineral potential. Under this alternative, an estimated 61 miles of road construction or reconstruction for locatable mineral activities would occur in inventoried roadless areas each year between years 2000 and 2004; an estimated 21 miles of road construction or reconstruction for exploration or development associated with existing mineral leases would occur in inventoried roadless areas each year between years 2000 and 2004; and an additional 12 miles of road construction or reconstruction could occur under new mineral leases in inventoried roadless areas each year between years 2000 and 2004.

Under the prohibition alternatives, construction or reconstruction of roads for locatable mineral exploration or development would be considered a right of access provided by the General Mining Law. Therefore, locatable mineral exploration and development would be excepted from the prohibition on road construction and reconstruction and not affected by the alternatives. There would also be little effect on salable minerals, since there would not likely be an interest in development of material sites in inventoried roadless areas because inventoried roadless areas are generally remote to the areas of intended use and would not be cost-effective to develop. Generally, other sources of similar material are available outside inventoried roadless areas.

The prohibition of road construction and reconstruction is, however, anticipated to have some impact on leasable minerals. The prohibition alternatives would not directly prohibit exploration or development of leasable minerals, but would prohibit construction or reconstruction of roads associated with future mineral leasing. Proposals for exploration or development of leasable minerals currently not under lease that would use existing roads or do not require use of roads may be allowed within inventoried roadless areas. In addition, construction or reconstruction of roads on existing leases in inventoried roadless areas would be allowed as necessary to fulfill the terms of existing leases. Nonetheless, exploration and development of unleased coal, oil and gas, and phosphate minerals in inventoried roadless areas could be affected by Alternatives 2 through 4.

The prohibition of road construction or reconstruction could affect exploration and possible development of five high potential oil and gas areas and preclude possible future development of up to an estimated 21.4 million barrels of oil on the Los Padres National Forest in California. It could affect exploration for or development of up to an estimated 7,641,000 acres of inventoried roadless areas with varying levels of potential to contain oil and gas in the Rocky Mountain Area. It could also affect exploration for or development of up to 2,539,000 acres of inventoried roadless areas with various levels of potential to contain coal resources, 93% of which are in Regions 1, 2, and 4. However, the amount of coal, oil, and gas resources actually beneath inventoried roadless areas has not been estimated, and the Agency believes there is unlikely to be more than a small percentage of these resources in inventoried roadless areas within their permissive tract or province. In addition, the vast majority of inventoried roadless areas have been open to leasing for decades; thus areas with economically recoverable deposits are likely to have already been leased or have existing leases that are not subject to the prohibition alternatives. Moreover, the total oil and gas production from the entire National Forest System is currently about 0.4% of the current national production. Finally, the prohibitions could preclude development of an estimated 873.3 million tons of phosphate resources in 7,939 acres designated as Known Phosphate Lease Areas within inventoried roadless areas on the Caribou-Targhee National Forest in Idaho.

In the short-term, economic impacts would be relatively minor, since the road prohibition does not apply to existing leases. Short-term impacts would be expected where current leasable reserves are close to depletion, and reserves in inventoried roadless areas are the most economically attractive alternative for new development. In the long-term, prohibition of road construction or reconstruction would likely preclude future development of leasable minerals within inventoried roadless areas. The potential economic impacts will depend on a variety of factors, including the availability of deposits outside of inventoried roadless areas, mineral prices, and technology changes. Compared to the No Action alternative, the economic effects of reducing or foregoing future opportunities for leasable mineral production on NFS lands include decreases in jobs, income, and Payments to States. If an exception for road construction for future mineral leasing is chosen, then exploration and development of all leasable minerals would be allowed, and the impacts on leasable minerals listed above would not occur.

Real Estate Management

Land ownership within NFS boundaries includes parcels of land owned by States, private individuals, and other Federal and non-Federal entities. The Forest Service is obligated to provide access to these lands. Less than 1% of lands within inventoried roadless area boundaries are estimated to be non-Federal land.

Under all alternatives, the Forest Service would continue to recognize and honor requests for access to non-Federal ownership of lands or interest in lands, pursuant to a reserved or outstanding right, or as provided by statute or treaty. These rights include, but are not limited to, rights of access provided in the Alaska National Interest Lands Conservation Act and highway rights-of-way granted over NFS lands under Revised Statute 2477. The most common type of access pursued in conjunction with these two prominent statutes is roaded access.

In addition, commercial and non-commercial interests, not associated with a right granted pursuant to a reserved or outstanding right, or as provided by statute or treaty, also use and occupy NFS lands for a variety of purposes. The more common of these non-recreation special uses include communication sites, utility corridors (oil/gas pipelines, fiber optic lines, telephone lines, and power lines), linear irrigation facilities (pipelines, ditches, canals), and public and private roads.

None of the alternatives would suspend or modify any existing permit, contract, or other legal instrument authorizing the occupancy and use of NFS lands. Under Alternatives 2 through 4, potential effects on future non-recreation special uses within roadless areas would be limited. It is estimated that between years 2000 and 2004, fewer than 20 non-recreation special use projects, with an estimated 35 miles of associated road construction or reconstruction may be affected. Non-recreation special uses may be authorized in inventoried roadless areas when the use and occupancy is consistent with the land management plan and can be constructed without road access. Current and expected future demand to locate these types of uses in inventoried roadless areas is minimal.

Livestock Grazing

On NFS lands, most areas that are suitable for grazing have already been placed in allotments, and the opportunity to expand is negligible. Prohibiting road construction, reconstruction or timber harvest in inventoried roadless areas would not affect existing routes of access to grazing allotments or the future supply of allotments.

Non-Commodity Values

Non-commodity values include ecological, passive use, spiritual, and aesthetic values. Ecological values include maintenance of ecosystem health, conservation of plant and animal species, conservation of air and water quality, and provision of undeveloped natural areas for research and teaching. Passive use, spiritual, and aesthetic values include

valuing scenic quality, the desire to experience solitude and personal renewal in wild areas, feeling a sense-of-place attachment to a specific area, wanting to know that natural areas exist for their own sake, and the desire to leave a legacy of natural areas for future generations.

The impacts of Alternative 1 on people who value the non-commodity benefits of inventoried roadless areas could include diminished air and water quality, a degradation of scenic quality, reduced opportunities to experience solitude and personal renewal, and alteration of special places, including sacred sites.

Alternatives 2 through 4 would conserve current roadless area characteristics and the non-commodity values associated with those characteristics. These include clean air and water, healthy aquatic and land-based ecosystems, species viability and biodiversity, and minimized human disturbance. These alternatives would also have a positive effect on people who have passive use values and on those who value inventoried roadless areas as places for research and teaching. In addition, these alternatives would have a positive effect for people who value scenic quality, who wish to experience solitude and personal renewal in undisturbed settings, and those who have an attachment to sites within inventoried roadless areas. The alternatives that limit or prohibit timber harvest (Alternatives 3 and 4), in general, would go further in protecting non-commodity values than the alternative that prohibits road construction and reconstruction alone (Alternative 2).

Effects of the Tongass National Forest Alternatives

Encompassing approximately 17 million acres, the Tongass National Forest is the largest administrative unit in the Forest Service. Ecologically, the Tongass is known for its unique coastal island topography, karst terrain, temperate old growth rainforest, and low numbers of threatened and endangered species. Approximately 84% of the forest occurs in land use designations that have substantial limitations on road building and timber harvest activities. The forest's high degree of overall ecosystem health is largely due to the quantity and quality of its roadless areas.

The Tongass provides many recreation, fishing, and hunting opportunities. Currently on the Tongass, recreation opportunity demand is well below supply, and it is expected to be met in the near future for most types of recreation opportunities. In addition, Federal legislation acknowledges the importance of subsistence hunting, fishing, and gathering in Alaska. Within Southeast Alaska, the rural population in particular relies heavily on a subsistence lifestyle.

Over the last decade, timber harvest levels on the Tongass National Forest have declined by 69%. In 1991, 471 million board feet were removed from the forest, compared to the 1999 harvest level of 146 million board feet. The harvest reductions have been a consequence of increased competition in global wood products markets, coupled with the termination of two 50-year timber harvest contracts. The Southeast Alaska timber

industry is undergoing a fundamental transformation, as operators work to regain a competitive niche in the international wood products market and reshape the industry to remain viable in the absence of large-scale pulp mills. Under current and reasonably foreseeable market conditions, timber harvest is projected to average 124 million board feet per year through 2010.

Under the Tongass Exempt Alternative, the Tongass would be exempted from the final roadless rule, and land management would continue as outlined in the 1999 Record of Decision for the Tongass Land Management Plan Revision. Projected risk to ecosystem health would remain unchanged, human uses would continue at levels projected under the Tongass Land Management Plan Revision, and social and economic values would be affected as described within the current Tongass Land Management Plan Revision. Under the current Tongass Land Management Plan Revision, the total projected timber offer within inventoried roadless areas on the Tongass is 108 million board feet per year, requiring 58 miles of road construction and reconstruction annually. About two-thirds of the forest's planned timber volume offered from years 2000 through 2004 would be from inventoried roadless areas. This volume is approximately half of the total planned volume offered within inventoried roadless areas nationally. Of the 108 million board feet offered for sale, approximately 77 million board feet is expected to be harvested each year.

Under the Tongass Not Exempt alternative, the alternative selected for other NFS lands would apply to the Tongass National Forest. The effects of implementing one of the prohibition alternatives would be more dramatic on the Tongass than other national forests or grasslands, since more road construction and reconstruction in inventoried roadless areas is projected to occur on the Tongass than elsewhere. For the various resources, no relevant differences in effects were identified among Alternatives 2, 3, and 4, since the prohibition on road construction and reconstruction alone would decrease timber harvest in inventoried roadless areas by 95%.

Applying Alternative 2, 3, or 4 is expected to reduce risk to old growth ecosystems, species viability, and diversity, and would lower risk to fish and wildlife species that are valued for recreational hunting, fishing, viewing and subsistence. Similarly, the wild and unspoiled nature of many inventoried roadless areas would be maintained, thus conserving the remote and semi-remote recreational opportunities and passive-use values that are commonly sought on the Tongass.

Prohibitions would, however, likely have substantial effects on the forest's timber program, and timber-related industry in Southeast Alaska. Communities where the timber industry continues to be a cornerstone of the economy and where the Forest Service has a strong presence would especially be at risk of economic decline. The effect of applying Alternatives 2, 3, or 4 to the Tongass is estimated to be a loss of 364 to 383 direct jobs and $16.7 to $17.6 million in personal income in Southeast Alaska. Additional impacts could occur from losses in Forest Service employment of 141 direct jobs and $7.1 million in personal income.

If the Tongass Not Exempt alternative is chosen with the social and economic mitigation measure, then the alternative selected for the rest of NFS lands would be applied to the inventoried roadless areas on the Tongass in April 2004. Under this alternative, 61 miles

of road construction and reconstruction would occur per year until 2004. In addition, 77 million board feet of timber may be harvested per year from inventoried roadless areas on the Tongass through 2004. Under this alternative with mitigations, the beneficial effects of prohibitions applied immediately to the Tongass would be foregone for some ecological resources.

In 2004, at the time the prohibitions would be applied, road construction and reconstruction in inventoried roadless areas on the Tongass would drop from 61 to 0 miles per year. In addition, application of the prohibition alternatives may result in harvest reductions of approximately 73 to 77 million board feet per year. This would provide ecological benefits due to less ground disturbing activities, which in turn conserve non-commodity values and dispersed recreation opportunities. At the same time, application of the prohibitions would cause loss of 364 to 383 jobs and $16.7 to $17.6 million in personal income per year.

The Tongass Deferred Alternative defers a decision on applying any prohibitions to the inventoried roadless areas on the Tongass to the time of the 5-year Plan Review in 2004. At such time, an evaluation of inventoried roadless areas on the Tongass would be completed to determine whether road construction and reconstruction should be prohibited in any or all inventoried roadless areas of the Tongass. If the prohibitions are applied, the effects could be the same as those described in the preceding paragraph.

Under the Tongass Selected Areas Alternative, road construction and reconstruction would be prohibited only within inventoried roadless areas in the Old-growth Habitat, Semi-Remote Recreation, and Remote Recreation land use designations, and LUD IIs. Under this alternative, the short-term timber supply (i.e. the scheduled timber offer from fiscal years 2000 to 2004) will be affected. Total annual offer would be reduced from 176 to 128 million board feet per year through 2004. The effect of the reduction in timber harvest is estimated to be a loss of 170 direct jobs and $7.8 million in personal income per year.

Of the four land use designations addressed within this alternative, the most road construction is projected to occur within Old-growth Habitat land use designations. Since Old-growth Habitat designations were specifically chosen for their value to old growth dependent and disturbance sensitive species, localized ecological benefits would be expected as a result of prohibiting road construction under this alternative. Future recreational development, currently provided for in many land use designations on the Tongass, is likely to occur with the continued growth of the tourism industry in Southeast Alaska. The prohibition on road construction within the Semi-Remote Recreation land use designations could have detrimental effects on future recreational developments within the Semi-remote Recreation land use designations.

Effect of the Roadless Rule with the Final Planning and Proposed Roads Rules

Along with the Roadless Rule, the Forest Service has developed two other rules, the final Planning Regulations at 36 C.F.R. §219 and the proposed National Forest System Road Management and Transportation System regulations at 36 C.F.R. §212 (Roads Policy). Together, these three rules will help integrate the emphasis areas of the Natural Resource Agenda into regulation. The planning regulations affirm sustainability as the overall goal for stewardship of the natural resources of each national forest and grassland consistent with the laws that guide the management of these lands. Sustainability entails meeting the needs of present generations without compromising the ability of future generations to meet their needs. The Roads policy helps address the balance between safe and efficient access for all forest road users and protection of healthy ecosystems. By developing these three rules together, the Forest Service is able to ensure consistency in definitions and policy direction. The result of these rulemaking efforts is an efficient alignment of priorities and resources.

Cumulative Effects

The most consistent change exhibited across all resources, which directly or indirectly affects NFS lands management, is our growing population and our increasingly affluent standard of living. The increasing population is intensifying the pressure on our natural resources. Both nationally and globally, there exists a prolific demand for wood products, minerals, recreational activities, and, to a lesser extent, for special uses such as power line rights-of-way, irrigation diversions, or communication sites. Mineral and energy development are also associated with intensified consumer demand from economic growth.

Together, population and economic growth are causing shifts in development patterns. More privately owned rural land is being converted into housing developments, community infrastructures, commercial centers, and industrial sites. This reduction of open space is compromising the quantity and quality of available habitat for some aquatic and terrestrial animal and plant species. In addition, there is an increasing demand to provide recreation opportunities and access to those activities and facilities close to population centers. Accelerated demands for recreation and special uses on NFS lands are also linked to the changes in development patterns. Cumulatively, the pressure exerted on these resources is likely to increase adverse effects to biodiversity.

Nonetheless, social values and paradigms are shifting across our nation as we learn more about ecosystem function and open space scarcity. With the urbanization of privately owned lands, a growing number of people value Federals lands as a repository of biodiversity and conservation. Many people appreciate NFS lands more for their inherent “naturalness” than for the commodities, such as timber, minerals, and grazing, that they can provide. These societal changes, along with implementation of environmental laws,

are changing some programs and activities for Federal land-management agencies like the Forest Service, National Park Service, and Bureau of Land Management. Examples include the recent National Park Service decision to limit snowmobile use in selected parks, and the Bureau of Land Management announcement in January 2000 to develop a strategy to improve management of off-highway vehicle use. Still, maintaining a balance between competing uses in inventoried roadless areas is increasingly difficult as large areas available for dispersed recreation decline due to development.

Approximately 31% of the NFS lands are in inventoried roadless areas. Their value as biological strongholds for terrestrial and aquatic plants and wildlife and as sources of high quality water have become increasingly important as habitat loss, habitat degradation, nonnative species invasions, and development continue to occur on other NFS lands and other lands nationally. More than 55% of the threatened, endangered, and proposed species with habitat on or affected by NFS lands, are directly or indirectly affected by inventoried roadless areas. This percentage represents approximately 25% of all animal species and 13% of plant species listed under the Endangered Species Act within the United States. With the exception of Alaska, few large, relatively undisturbed areas remain in this country outside of designated Wilderness, increasing the relative value of the waters and wetlands and other habitats that inventoried roadless areas support and the biological diversity that they foster.

With regard to social and economic effects, NFS lands satisfy approximately 5% of the nation's timber demand. Inventoried roadless areas are anticipated to provide up to 7% of the Agency's total timber harvest or about one-third of 1% of the national demand. On a national scale, mineral and energy contributions from inventoried roadless areas are small, but, similar to the timber resource, these contributions can have critical economic impacts on certain local communities. These communities have seen the reduction of the Agency's overall timber program from 12 billion board feet in 1987 to less than 3 billion board feet in 1999 due to ecological and social concerns. Further economic loss from a reduced timber program, or additional loss from a reduction in the minerals program, without corresponding new local employment opportunities at the same wage scale, would add to the social and economic problems faced by rural communities that cannot readily diversify. Many residents of these rural communities view any further reductions in these programs as a threat to their way of life and their economic stability. Reductions in resource production may require some of these residents to relocate to different communities or regions of the country to obtain comparable employment. Other Federal lands, State and private lands, or imports would most likely offset any decrease in mineral and energy supply from inventoried roadless areas.

Cumulative Effects with Other Federal Policies

The Forest Service evaluated the cumulative effects of the Roadless Rule when combined with other Federal policies including:

- The Unified Federal Policy;
- Report to the President on the Wildfires of 2000;
- Draft Cohesive Fire Strategy;
- Forest Service Strategic Plan;
- Sierra Nevada Framework;
- Interior Columbia Basin Ecosystem Management Project;
- Lynx and Other Listings under the Endangered Species Act; and
- Land Management Planning.

All of these Federal policies stem from or are aligned with the Forest Service Natural Resources Agenda and Draft Strategic Plan in that they all focus on ecosystem health and protection of the nation's forests, rangelands, and watersheds. These policies compliment the proposed Roadless Rule, which promotes ecosystem health of inventoried roadless areas through a prohibition of activities that most directly threaten their roadless character.

Other Effects and Disclosures

Implementation of any of the prohibition or Tongass alternatives does not require an on-the-ground action to occur; therefore, they do not compel short-term uses, nor do they compel an irreversible or irretrievable commitment of resources.

None of the prohibition or Tongass alternatives require consultation under the Fish and Wildlife Coordination Act, because they do not require water to be impounded or diverted, or the National Historic Preservation Act because there are no ground disturbing actions. Consultation is in progress with the Fish and Wildlife Service and the National Marines Fisheries Service in accordance with the Endangered Species Act implementing regulations.

Consultation and Coordination

The Forest Service consulted with many government agencies and convened an interagency team of Forest Service employees and representatives of other Federal agencies with expertise or jurisdiction by law to review the FEIS. The agencies that were consulted include the Department of the Interior (Bureau of Land Management and U.S. Fish and Wildlife Service), Department of Justice, Department of Energy, National Marine Fisheries Service, Small Business Administration, the President's Council on Environmental Quality, Office of Management and Budget, and Council of Economic Advisors.

Table S-1. Comparison of Key Characteristics and Effects by Prohibition Alternative. *The effects summarized in this table[A] would occur in inventoried roadless areas throughout the entire National Forest System, including the Tongass National Forest.*

Issue, Objective, or Measure	**Alternative 1** No Action; No Prohibitions	***Preferred Alternative*** **Alternative 3 – with Selected Social and Economic Mitigations** *And* **Tongass Not Exempt Beginning in 2004**	**Alternative 2** Prohibit Road Construction and Reconstruction Within Inventoried Roadless Areas	**Alternative 3** Prohibit Road Construction, Reconstruction, and Timber Harvest Except for Stewardship Purposes[B] Within Inventoried Roadless Areas	**Alternative 4** Prohibit Road Construction, Reconstruction, and All Timber Cutting Within Inventoried Roadless Areas
Inventoried Roadless Areas with Permanent Prohibition on Road Construction and Reconstruction	0 acres	49,178,000 acres until 2004 58,518,000 acres after 2004[C], when prohibitions would be implemented on the 9,340,000 acres of inventoried roadless area on the Tongass National Forest.	58,518,000 acres		
Inventoried Roadless Areas with Permanent Prohibition on Commodity-Purpose Timber Harvest	0 acres	49,178,000 acres until 2004 58,518,000 acres after 2004, when prohibitions would be implemented on the 9,340,000 acres of inventoried roadless area on the Tongass National Forest; Stewardship timber harvest not requiring road construction or reconstruction would continue.	0 acres	58,518,000 acres; Stewardship timber harvest not requiring road construction or reconstruction would continue.	58,518,000 acres

[A] For ease of comparison and greater consistency, outputs and effects in these tables are displayed as annual averages whenever possible. In Chapter 3 the analysis of effects are often shown as 5 year totals for the period 2000 to 2004. Any discrepancies between these figures and those cited in the text, other tables, or in the database are due to rounding.
[B] Stewardship-purpose timber harvest includes timber sales made primarily to help achieve desired ecological conditions or to attain some non-timber resource objective requiring manipulation of the existing vegetation (for example, reducing forest fuels by constructing a fuel break). Refer to the Glossary for a complete definition.
[C] When used in reference to the Tongass, 2004 means April 2004, the date of the scheduled plan revision.

Table S-1. Comparison of Key Characteristics and Effects by Prohibition Alternative. (cont.) *The effects summarized in this table would occur in inventoried roadless areas throughout the entire National Forest System, including the Tongass National Forest.*

Issue, Objective, or Measure	Alternative 1	***Preferred Alternative*** **Alternative 3 – with Selected Social and Economic Mitigations** *And* **Tongass Not Exempt Beginning in 2004**	Alternative 2	Alternative 3	Alternative 4
Short Term Average Annual Timber Related Road Construction and Reconstruction Planned in Inventoried Roadless Areas From 2000 to 2004	125 miles/year	58 miles/year until 2004 0 miles/year after 2004, when road construction would also be prohibited in inventoried roadless areas on the Tongass National Forest.	0 miles/year		
Short Term Average Annual Non-Timber Related Road Construction and Reconstruction Planned In Inventoried Roadless Areas From 2000 to 2004	107 miles/year	63 miles/year until 2004 60 miles/year after 2004 when road construction would also be prohibited in inventoried roadless areas on the Tongass National Forest; this includes those roads associated with Federal Aid Highway Projects	59 miles/year		
Short Term Average Annual Acreage Planned for Timber Harvest in Inventoried Roadless Areas From 2000 to 2004	18,000 – 19,000 acres/year	7,200 acres/year until 2004 4,400 acres/year after 2004	8,000 acres/year	4,400 acres/year	0 acres/year

Table S-1. Comparison of Key Characteristics and Effects by Prohibition Alternative. (cont.) *The effects summarized in this table would occur in inventoried roadless areas throughout the entire National Forest System, including the Tongass National Forest.*

Issue, Objective, or Measure	Alternative 1	***Preferred Alternative*** **Alternative 3 – with Selected Social and Economic Mitigations** *And* **Tongass Not Exempt Beginning in 2004**	Alternative 2	Alternative 3	Alternative 4
Short Term Average Annual Timber Volume Offered[A] on All NFS Lands From 2000 to 2004 (MMBF = million board feet)	3,300 MMBF/year	3,214 MMBF/year until 2004 3,112 MMBF/year after 2004	3,140 MMBF/year	3,112 MMBF/year	3,080 MMBF/year
Short Term Average Annual Timber Volume Offered in Inventoried Roadless Areas From 2000 to 2004 (MMBF = million board feet)	220 MMBF/year	140 MMBF/year until 2004 32 MMBF/year after 2004	60 MMBF/year	32 MMBF/year	0 MMBF/year
Short Term Average Annual Timber Volume Harvested[B] in Inventoried Roadless Areas From 2000 to 2004 (MMBF = million board feet)	147 MMBF/year	98 MMBF/year until 2004 21 MMBF/year after 2004	39 MMBF/year	21 MMBF/year	0 MMBF/year

[A] Volume Offered is an estimate of timber volume that will be advertised for sale. Refer to the Glossary for a complete definition.
[B] Volume Harvested is an estimate of timber volume that will actually be cut, and is usually less than the volume offered. Refer to the Glossary for a complete definition.

Table S-1. Comparison of Key Characteristics and Effects by Prohibition Alternative. (cont.) *The effects summarized in this table would occur in inventoried roadless areas throughout the entire National Forest System, including the Tongass National Forest.*

Issue, Objective, or Measure	Alternative 1	***Preferred Alternative*** **Alternative 3 – with Selected Social and Economic Mitigations** *And* **Tongass Not Exempt Beginning in 2004**	Alternative 2	Alternative 3	Alternative 4
Short Term Average Annual Timber Related Employment From All NFS Timber Harvest From 2000 to 2004 (direct timber-related jobs)	26,957 jobs/year	26,610 jobs/year until 2004 26,227 jobs/year after 2004	26,350 jobs/year	26,227 jobs/year	26,071 jobs/year
Short Term Average Annual Income From All NFS Timber Harvest Related Employment From 2000 to 2004 (direct timber-related job income)	$1053.2 million/year	$1037.7 million/year until 2004 $1020.1 million/year after 2004	$1025.4 million/year	$1020.1 million/year	$1013.7 million/year
Short Term Average Annual Payments to States From All NFS Timber Receipts From 2000 to 2004	$135.0 million/year	$133.0 million/year until 2004 $131.3 million/year after 2004	$132.0 million/year	$131.3 million/year	$130.5 million/year

Table S-1. Comparison of Key Characteristics and Effects by Prohibition Alternative. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the entire National Forest System, including the Tongass National Forest.*

Issue, Objective, or Measure	Alternative 1	***Preferred Alternative*** **Alternative 3 – with Selected Social and Economic Mitigations** *And* **Tongass Not Exempt Beginning in 2004**	Alternative 2	Alternative 3	Alternative 4
Agency Costs	Overall agency costs would continue at current levels.	Prohibiting road construction would reduce future maintenance costs for roads that might have been built. Forest health treatments may be more costly in inventoried roadless areas. No additional planning costs would be incurred, although savings in appeals and litigation costs related to inventoried roadless area management are anticipated. Overall agency costs are expected to remain the same.			
Inventoried Roadless Areas At Risk From Uncharacteristic Wildfire Effects	In inventoried roadless areas, 7 million acres are at moderate risk and 4 million acres are at high risk from wildfires that could potentially cause uncharacteristic wildfire effects. A majority of NFS lands with the highest priority for fuel treatment are located outside inventoried roadless areas. Little fuel treatment work is anticipated in inventoried roadless areas unless there is a threat to the wildland urban interface, threatened and endangered species habitat and readily accessible municipal watersheds. Fire risk, either from wildfires or hazardous fuels, is not a concern on the Tongass.				Acreage burned by large wildland fires in inventoried roadless areas, as on other NFS lands, is expected to increase slightly in the next 20 years; potential exists for a few more large fires than in Alternatives 1 – 3.
Locatable and Leasable Minerals in Inventoried Roadless Areas	No change from current management policies.	Prohibiting road construction would preclude future leasable mineral exploration and development when reliant on road construction in inventoried roadless areas. Total economic impacts associated with current operations seeking to expand into inventoried roadless areas could directly affect 546 jobs and $35.8 million per year in associated income beginning sometime after 2003. No change from current management policies for locatable minerals.			

Table S-1. Comparison of Key Characteristics and Effects by Prohibition Alternative. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the entire National Forest System, including the Tongass National Forest.*

Issue, Objective, or Measure	Alternative 1	***Preferred Alternative*** **Alternative 3 – with Selected Social and Economic Mitigations** *And* **Tongass Not Exempt Beginning in 2004**	Alternative 2	Alternative 3	Alternative 4
Developed Recreation Opportunities	Development would continue consistent with existing policies and management direction.	Similar to Alternatives 2 – 4, with some new opportunities for developed and road-based recreation in inventoried roadless areas on the Tongass National Forest until 2004 based on existing policies and management direction, and in areas where social and economic mitigation measures are applied	Opportunities for future developed recreation would decline in inventoried roadless areas, which may cause additional impacts on existing developed and road based recreation as overall demand increases.		
Dispersed Recreation Opportunities	Land base for dispersed recreation would be maintained on 24.2 million acres of inventoried roadless areas where land management plan prescriptions prohibit road construction. The remaining 34.3 million acres (59%) would be available for road based and developed recreation based on project and forest level planning.	Similar to Alternatives 2 – 4, with potential for some loss of dispersed recreation opportunities in inventoried roadless areas on the Tongass National Forest until 2004, and in areas where social and economic mitigation measures are applied.	Land base for dispersed recreation would be maintained on all 58.5 million acres of inventoried roadless areas.		

Table S-1. Comparison of Key Characteristics and Effects by Prohibition Alternative. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the entire National Forest System, including the Tongass National Forest.*

Issue, Objective, or Measure	Alternative 1	***Preferred Alternative*** **Alternative 3 – with Selected Social and Economic Mitigations** *And* **Tongass Not Exempt Beginning in 2004**	Alternative 2	Alternative 3	Alternative 4
Hunting And Fishing Opportunity In Inventoried Roadless Areas	Quality of opportunities potentially reduced by degradation of habitat for fish and some game species.	Similar to Alternatives 2 – 4, with potential for some reduction in quality of hunting and fishing opportunities in inventoried roadless areas on the Tongass National Forest until 2004, and in areas where social and economic mitigation measures are applied	Maintains current quality of roadless hunting and fishing opportunities. Protects habitat important for some fish and wildlife species, particularly for those sensitive to human disturbance, or those with large home ranges, with associated benefits to hunting and fishing.		
Impacts to Designated or Potential Wilderness Near or Adjacent to Inventoried Roadless Areas	Roading in inventoried roadless areas may increase potential risk to adjacent or nearby wilderness values.	Similar to Alternatives 2 – 4; with potential for increased risk to wilderness values in adjacent or nearby Wilderness areas or potential wilderness areas on the Tongass until 2004, and in areas where social and economic mitigation measures are applied	Prohibiting road building in inventoried roadless areas would reduce potential risk to wilderness values in adjacent or nearby designated Wilderness or potential Wilderness areas.		

Table S-1. Comparison of Key Characteristics and Effects by Prohibition Alternative. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the entire National Forest System, including the Tongass National Forest.*

Issue, Objective, or Measure	Alternative 1	***Preferred Alternative*** **Alternative 3 – with Selected Social and Economic Mitigations** *And* **Tongass Not Exempt Beginning in 2004**	Alternative 2	Alternative 3	Alternative 4
Watershed Resources in Inventoried Roadless Areas	Localized, short-term effects to water quantity and quality where high levels of roading and timber harvest are planned; increased risk of mass wasting and erosion in localized areas.	Similar to Alternative 2; with potential for some increased risk in inventoried roadless areas on the Tongass until 2004 of limited local short-term changes to water quantity and quality, small risk of mass wasting and erosion.	Beneficial effects to those forests where high levels of roading would have occurred; limited benefits elsewhere; limited local short-term changes to water quantity and quality, reduced risk of mass wasting and erosion.	Beneficial effects to those forests where high levels of roading and commodity timber harvest would have occurred; limited benefits elsewhere; limited local short-term changes to water quantity and quality, reduced risk of mass wasting and erosion.	Substantial benefits to those forests where high levels of roading and timber harvest would have occurred; limited benefits elsewhere; water quantity generally near undisturbed levels; water quality, mass wasting, erosion same as Alternative 3 except in areas burned by wildfire.
Air Resources in and Adjacent to Inventoried Roadless Areas	Small risk of gradual air quality deterioration from dust, smoke and emissions associated with road construction, reconstruction, and use.	Lower risk of air quality deterioration from dust, smoke and emissions.			Lower risk of gradual air quality deterioration from dust, smoke and emissions. Increased risk relative to Alternatives 1, 2,and 3 from wildfire smoke due to inability to cut trees to reduce fuels.

Table S-1. Comparison of Key Characteristics and Effects by Prohibition Alternative. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the entire National Forest System, including the Tongass National Forest.*

Issue, Objective, or Measure	Alternative 1	***Preferred Alternative*** **Alternative 3 – with Selected Social and Economic Mitigations** *And* **Tongass Not Exempt Beginning in 2004**	Alternative 2	Alternative 3	Alternative 4
Biological Diversity in and Adjacent to Inventoried Roadless Areas	Greatest risk from roading and ground disturbance; highest potential for increased fragmentation, loss of connectivity, introduction of non-native invasive species, habitat degradation and disruption; least acres protected.	Similar to Alternative 3; with potential for some increased risk of human disturbance activities in important fish, wildlife, and plant habitats in inventoried roadless areas on the Tongass until 2004.	Beneficial effects due to reduced level of human disturbance activities and increased conservation of important fish, wildlife, and plant habitats.	Somewhat lower potential for ground disturbance relative to Alternative 2, but effects not substantially different given relatively small difference in projected timber offer volume.	Lowest levels of ground disturbance and habitat disruption, but effects essentially the same as Alternative 3. Limited potential for localized adverse effects from restriction on stewardship harvest, but not detectable at national scale.
Threatened, Endangered, And Proposed (TEP) Plant and Animal Species Protected	Greatest potential loss of habitat and adverse effects to TEP species from highest level of road construction and ground disturbance.	Important benefits to over 220 TEP species with habitat in or affected by inventoried roadless areas. Substantially reduced risk relative to Alternative 1; Slightly reduced risk relative to Alternative 2.	Important benefits to over 220 TEP species with habitat in or affected by inventoried roadless areas. Substantially reduced risk relative to Alternative 1.	Slightly reduced risk relative to Alternative 2, with less ground disturbance and habitat disruption.	Least amount of ground disturbance, but effects essentially the same as Alternatives 2 and 3.
Non-native Invasive Species (NIS)	Greatest risk for increased introduction and establishment of NIS from road construction and use, and other associated ground disturbance.	Slightly less ground disturbance than Alternative 2, but effects not substantially different given relatively small difference in projected timber offer volume.	Substantially reduced relative risk locally with prohibition on road construction.	Slightly less ground disturbance than Alternative 2, but effects not substantially different given relatively small difference in projected timber offer volume.	Slightly less ground disturbance than Alternative 2 and 3; greatest relative degree of protection against future introduction and establishment of NIS.

Table S-2. Comparison of Key Characteristics and Effects by Tongass National Forest Alternative[A]. *The effects summarized in this table would occur on inventoried roadless areas throughout the Tongass National Forest.*

Issue, Objective, or Measure	**Tongass Not Exempt** Alternative Selected for Other NFS Lands Applies to the Tongass National Forest Upon Implementation of the Final Rule	**Tongass Not Exempt Beginning in 2004** Alternative Selected for Other NFS Lands Applies to the Tongass National Forest in April 2004	**Tongass Exempt** Alternative Selected for Other NFS Lands Does Not Apply to the Tongass National Forest	**Tongass Deferred** Alternative Not Selected at This Time; Determine Whether Road Construction Should be Prohibited in Inventoried Roadless Areas as Part of 5 Year Plan Review in 2004	**Tongass Selected Areas** Prohibit Road Construction and Reconstruction in the Old Growth, Semi-Remote Recreation, Remote Recreation Land Use Designations, and LUD IIs Within Inventoried Roadless Areas on the Tongass National Forest
Inventoried Roadless Areas with Prohibitions	9,340,000 acres	0 acres until 2004 9,340,000 acres after 2004	0 acres	No permanent prohibitions unless and until decided upon during the 5-year plan review	6,989,000 acres
Average Annual Timber Related Road Construction & Reconstruction Planned in Inventoried Roadless Areas From 2000 to 2040	0 miles/year	58 miles/year until 2004; 0 miles/year after 2004	58 miles/year	58 miles/year until 2004; Depending on the decision made during the 5-year plan review in 2004; fewer roads may be constructed or reconstructed after that date.	There would be a short term reduction in road construction due to 13 cases where road segments were planned to cross these 4 LUDs to access timber sales; in the long term, road construction is expected to return to an average annual 58 miles/year

[A] For purposes of comparing Tongass alternatives, the effects of applying prohibition Alternative 3 with Selected Mitigations are displayed. The outcomes are nearly identical to those resulting from applying Alternatives 2 and 4.

Table S-2. Comparison of Key Characteristics and Effects by Tongass National Forest Alternative[A]. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the Tongass National Forest.*

Issue, Objective, or Measure	Tongass Not Exempt	Tongass Not Exempt Beginning in 2004	Tongass Exempt	Tongass Deferred	Tongass Selected Areas
Average Annual Non-Timber Related Road Construction and Reconstruction Planned In Inventoried Roadless Areas From 2000 to 2040	0 miles/year	3 miles/year until 2004 0 miles/year after 2004	3 miles/year	3 miles/year until 2004; Depending on the decision made during the 5-year plan review in 2004; fewer roads may be constructed or reconstructed after that date.	3 miles/year
Average Annual Acreage Planned for Timber Harvest in Inventoried Roadless Areas From 2000 to 2040	0 acres/year	2,800 acres/year until 2004 0 acres/year after 2004	2,800 acres/year	2,800 acres/year until 2004 Depending on the decision made during the 5-year plan review in 2004; fewer acres may be planned for timber harvest after that date.	2,000 acres/year until 2004 2,700 acres/year after 2004
Average Annual Timber Volume Offered by the Tongass From 2000 to 2040 (MMBF = million board feet)	68 MMBF/year	176 MMBF/year until 2004 68 MMBF/year after 2004	176 MMBF/year	176 MMBF/year Depending on the decision made during the 5-year plan review in 2004; fewer acres may be planned for timber harvest after that date.	128 MMBF/year until 2004 166 MMBF/year after 2004
Average Annual Timber Volume Offered by the Tongass in Inventoried Roadless Areas From 2000 to 2040 (MMBF = million board feet)	0 MMBF/year	108 MMBF/year until 2004 0 MMBF/year after 2004	108 MMBF/year	108 MMBF/year Depending on the decision made during the 5-year plan review in 2004; fewer acres may be planned for timber harvest after that date.	60 MMBF/year until 2004 98 MMBF/year after 2004

[A] For purposes of comparing Tongass alternatives, the effects of applying prohibition Alternative 3 with Selected Mitigations are displayed. The outcomes are nearly identical to those resulting from applying Alternatives 2 and 4.

Table S-2. Comparison of Key Characteristics and Effects by Tongass National Forest Alternative[A]. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the Tongass National Forest.*

Issue, Objective, or Measure	Tongass Not Exempt	Tongass Not Exempt Beginning in 2004	Tongass Exempt	Tongass Deferred	Tongass Selected Areas
Average Annual Timber Volume Harvested by the Tongass in Inventoried Roadless Areas From 2000 to 2040 (MMBF = million board feet)	0 MMBF/year	77 MMBF/year until 2004 0 MMBF/year after 2004	77 MMBF/year	77 MMBF/year Depending on the decision made during the 5-year plan review in 2004; fewer acres may be planned for timber harvest after that date.	43 MMBF/year until 2004 70 MMBF/year after 2004
Average Annual Tongass Timber Harvest Related Employment (timber-related jobs per year)	242 jobs/year	625 jobs/year until 2004 242 jobs/year after 2004	625 jobs/year	625 jobs/year until 2004 Depending on the decision made during the 5-year plan review in 2004; the timber program may support fewer jobs after that date.	455 jobs/year
Average Annual Income From Tongass Timber Harvest Related Employment (direct timber-related job income)	$11.0 million/year	$28.6 million/year until 2004 $11.0 million/year after 2004	$28.6 million/year	$28.6 million/year until 2004 Depending on the decision made during the 5-year plan review in 2004; there may be less annual income from timber harvest related jobs after that date.	$20.8 million/year
Annual Payments to State (Alaska) from Timber Receipts	$1.0 million/year	$2.7 million/year until 2004 $1.0 million/year after 2004	$2.7 million/year	$2.7 million/year until 2004 Depending on the decision made during the 5-year plan review in 2004; there may be a reduction in Payments to State from timber harvest related jobs after that date.	$2.0 million/year

[A] For purposes of comparing Tongass alternatives, the effects of applying prohibition Alternative 3 with Selected Mitigations are displayed. The outcomes are nearly identical to those resulting from applying Alternatives 2 and 4.

Table S-2. Comparison of Key Characteristics and Effects by Tongass National Forest Alternative[A]. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the Tongass National Forest.*

Issue, Objective, or Measure	Tongass Not Exempt	Tongass Not Exempt Beginning in 2004	Tongass Exempt	Tongass Deferred	Tongass Selected Areas
Agency Costs	Greatest reduction of future costs for roads that would have been built, planning costs, and overall timber program costs. Greatest savings in appeals and litigation costs related to inventoried roadless area management are anticipated.	Overall agency costs would continue at current levels until 2004. After 2004, costs would decline in a similar fashion to Tongass Not Exempt.	Overall agency costs would continue at current levels.	Depending on local decisions made during the 5-year plan review in 2004, there may be reduced road maintenance, planning, and appeal/litigation costs after that date.	Will reduce future maintenance costs for roads that would have been built in the 4 LUDs. As a result, reduced planning costs would be incurred; some savings in appeals and litigation costs related to inventoried roadless area management are anticipated.
Dispersed Recreation Opportunities and Scenic Quality	Greatest amount of land conserved for dispersed recreation and high scenic quality.	Some loss of dispersed recreation opportunities and scenic quality in inventoried roadless areas until 2004. After that date, remaining opportunities are likely to be conserved.	Land base available for dispersed recreation activities and maintaining high scenic quality would continue to decline incrementally.	Some loss of dispersed recreation opportunities and scenic quality in inventoried roadless areas until 2004. Depending on local decisions made during the 5-year plan review, remaining opportunities could be conserved.	Dispersed recreation opportunities and high scenic quality in the 4 land use designations would be maintained at current levels.
Developed Recreation Opportunities	Reduced opportunity for some types of recreational development in inventoried roadless areas in all land use designations.	Continued opportunities for developed recreation in inventoried roadless areas consistent with current TLMP until 2004. Reduced opportunities after that date.	Development could continue consistent with current TLMP.	Continued recreation development consistent with current TLMP until 2004. Depending on local decisions made during the 5-year plan review, opportunities for new recreation sites in inventoried roadless areas could be reduced after 2004.	Reduced opportunity for some types of recreational development in the 4 land use designations.

[A] For purposes of comparing Tongass alternatives, the effects of applying prohibition Alternative 3 with Selected Mitigations are displayed. The outcomes are nearly identical to those resulting from applying Alternatives 2 and 4.

Table S-2. Comparison of Key Characteristics and Effects by Tongass National Forest Alternative[A]. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the Tongass National Forest.*

Issue, Objective, or Measure	Tongass Not Exempt	Tongass Not Exempt Beginning in 2004	Tongass Exempt	Tongass Deferred	Tongass Selected Areas
Hunting And Fishing Opportunity in Inventoried Roadless Areas	Maintains current level of quality for hunting, fishing, and subsistence opportunities in all land use designations.	Some reduction in quality of hunting, fishing, and subsistence opportunities until 2004. Opportunities that exist in inventoried roadless areas in 2004 are likely to be maintained.	Quality of opportunities are potentially reduced by loss or degradation of habitat that could affect commercial, recreational and subsistence species; among the alternatives, has the greatest potential to increase human competition for subsistence species.	Current levels of quality may be incrementally reduced until 2004. Depending on local decisions made during the 5-year plan review, future reductions in quality may be minimized.	Maintains quality of hunting, fishing, and subsistence opportunities in the 4 LUDs. Opportunities in other land use designations would likely decline incrementally over time.
Locatable and Leasable Minerals in Inventoried Roadless Areas	Prohibiting road construction may reduce exploration and development activity in response to higher access costs. No effect on future mineral leasing reliant on road access.	No effect to current programs until 2004. Prohibition of roading at that time may reduce exploration and development activity. No effect on future mineral leasing reliant on road access.	No effect to current programs. No effect on future mineral leasing reliant on road access.	No effect to current programs until 2004. Depending on local decisions made during the 5-year plan review, there may be reduced exploration and development activity in response to higher access costs. No effect on future mineral leasing reliant on road access.	May be some reduced exploration and development activity in response to higher access costs in the 4 LUDs. No effect on future mineral leasing reliant on road access.
Watershed Resources in Inventoried Roadless Areas	Provides less risk in all land use designations. Provides greatest opportunity to reduce impacts among the alternatives.	Current level of risks exist until 2004. After that date, lower level of risk in all LUDs.	Greatest level of risk relative to all other alternatives from roading and ground disturbance; highest level of risk to water quality, soil loss, mass wasting, soil productivity, and sedimentation.	Current level of risk until 2004. Depending on local decisions made during the 5-year plan review, there could be fewer impacts to water quality, soil loss, mass wasting, sedimentation, and soil productivity after that date.	Provides less risk to watershed resources in 4 LUDs

[A] For purposes of comparing Tongass alternatives, the effects of applying prohibition Alternative 3 with Selected Mitigations are displayed. The outcomes are nearly identical to those resulting from applying Alternatives 2 and 4.

Table S-2. Comparison of Key Characteristics and Effects by Tongass National Forest Alternative[A]. (cont.) *The effects summarized in this table would occur on inventoried roadless areas throughout the Tongass National Forest.*

Issue, Objective, or Measure	Tongass Not Exempt	Tongass Not Exempt Beginning in 2004	Tongass Exempt	Tongass Deferred	Tongass Selected Areas
Biological Diversity; Threatened, Endangered, And Proposed (TEP) Plant and Animal Species Protected	Provides less risk in all land use designations. Provides greatest opportunity to reduce impacts among the alternatives.	Current level of risks exist until 2004. After that date, lower level of risk in all LUDs.	Greatest risk relative to all other alternatives from roading and ground disturbance; highest potential for increased fragmentation, loss of connectivity, habitat degradation and disruption; least acres protected.	Current level of risk until 2004. Depending on local decisions made during the 5-year plan review, impacts could be reduced after that date.	Provides less risk to biological diversity in 4 LUDs.
Impacts to Wilderness from Management Decisions on Adjacent Inventoried Roadless Areas	No future threats to wilderness values from potential roading in adjacent or nearby inventoried roadless areas.	Similar to Tongass Exempt until 2004. After that date, no future threats to wilderness values from roading in inventoried roadless areas.	Potential for road building and associated activities in inventoried roadless areas would continue at current level of risk, and could increase threats to wilderness values in adjacent or nearby Wilderness areas and potential wilderness areas.	Similar to Tongass Exempt until 2004. Depending on local decisions made during the 5-year plan review, has a higher likelihood of reducing threats from roading in inventoried roadless areas after that date.	May slightly reduce threat to wilderness values since the 4 LUDs where prohibitions would apply are frequently adjacent to wilderness areas. Reduction is expected to be minimal as road building in portions of these 4 LUDs that are adjacent to wilderness is highly unlikely.

[A] For purposes of comparing Tongass alternatives, the effects of applying prohibition Alternative 3 with Selected Mitigations are displayed. The outcomes are nearly identical to those resulting from applying Alternatives 2 and 4.

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