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# Tongass Land and Resource Management Plan

## Final Environmental Impact Statement

Plan Amendment

Volume I

# Tongass Land Management Plan Amendment

## Final Environmental Impact Statement

January 2008

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Cooperating Agency: State of Alaska

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### Abstract:

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A Ninth Circuit Court ruling (2005) and the 5-Year Forest Plan Review (completed in January 2005) indicated the need to consider amending the Tongass National Forest Land and Resource Management Plan. This Final EIS responds to the Court and the 5-Year Review by analyzing seven alternatives for amending the Plan, including the No-Action alternative. Maps accompanying this Final EIS depict the land use designations proposed under each alternative. A separate document, called the Proposed Land and Resource Management Plan (Forest Plan), was published with the Draft EIS and was revised, as indicated in Chapter 2 of this Final EIS, to represent the Final Proposed Forest Plan. The action alternatives incorporate this Final Proposed Plan entirely, or with modifications. A number of issues are addressed, but three key issues are identified: 1) protecting high-value roadless areas from road development and timber harvest activity in order to protect roadless area values; 2) providing a sufficient timber supply to meet the market demand and help maintain a vibrant economy in Southeast Alaska; and 3) protecting the wildlife habitat and biodiversity of the Tongass, which is affected by road development and timber harvest activities. The seven alternatives are designed to provide a range of options for addressing these issues. Direct, indirect, and cumulative effects of the alternatives are quantified and compared in Chapters 2 and 3, based on inventory data and modeling.

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## ACRONYMS AND ABBREVIATIONS

|          |   |
|----------|---|
| ACHP     | Advisory Council on Historic Preservation               |
| ACMP     | Alaska Coastal Management Program                       |
| ADEC     | Alaska Department of Environmental Conservation         |
| ADF&G    | Alaska Department of Fish and Game                      |
| ADNR     | Alaska Department of Natural Resources                  |
| AFHA     | Anadromous Fisheries Habitat Assessment                 |
| AHRS     | Alaska Heritage Resource Survey                         |
| AKEPIC   | Alaska Exotic Plants Information Clearinghouse          |
| AMHS     | Alaska Marine Highway System                            |
| AMS      | Analysis of the Management Situation                    |
| ANCSA    | Alaska Native Claims Settlement Act of 1971             |
| ANHP     | Alaska Natural Heritage Program                         |
| ANILCA   | Alaska National Interest Lands Conservation Act of 1980 |
| APC      | Alaska Pulp Company                                     |
| ASQ      | allowable sale quantity                                 |
| AVSP     | Alaska Visitor Statistics Program                       |
| BIA      | U.S. Bureau of Indian Affairs                           |
| BLM      | Bureau of Land Management                               |
| BMP      | Best Management Practice                                |
| BP       | before present  |
| BTU      | British Thermal Unit                                    |
| CEQ      | Council on Environmental Quality                        |
| CFR      | Code of Federal Regulations                             |
| CMAI     | Culmination of Mean Annual Increment                    |
| Corps    | U.S. Army Corps of Engineers                            |
| DBH      | diameter at breast height                               |
| DCBD     | Division of Community and Business Development          |
| DCED     | Department of Community and Economic Development        |
| DEIS     | Draft Environmental Impact Statement                    |
| DGC      | Division of Governmental Coordination                   |
| DOL      | Department of Labor                                     |
| DOT&PF   | Department of Transportation and Public Facilities      |
| EA       | environmental assessment                                |
| EFH      | Essential Fish Habitat                                  |
| EIS      | Environmental Impact Statement                          |
| EPA      | U.S. Environmental Protection Agency                    |
| ESA      | Endangered Species Act                                  |
| EVC      | existing visual condition                               |
| °F       | degrees Fahrenheit                                      |
| FCRPA    | Federal Cave Resources Protection Act                   |
| FERC     | Federal Energy Regulatory Commission                    |
| FG       | foreground  |
| F.I.R.E. | finance, insurance, and real estate                     |
| FORPlan  | Previous Forest Planning Model                          |

## Contents

|                   |   |
|-------------------|---|
| FRESH             | Forest Resource Evaluation System for Habitat |
| FSM               | Forest Service Manual                         |
| FY                | fiscal year                                   |
| GIS               | geographic information system                 |
| GMU               | Game Management Unit                          |
| GSA               | General Services Administration               |
| HCA               | Habitat Conservation Area                     |
| HSI               | Habitat Suitability Index                     |
| IDT               | Interdisciplinary Team                        |
| IFA               | Inter-Island Ferry Authority                  |
| IPM               | Integrated Pest Management                    |
| IRA               | Inventoried Roadless Area                     |
| km                | kilometer                                     |
| KMDA              | known mineral deposit area                    |
| KPC               | Ketchikan Pulp Company                        |
| kV                | kilovolt                                      |
| LSTA              | Logging Systems and Transportation Analysis   |
| LTF               | log transfer facility                         |
| LTSY              | long-term sustained yield                     |
| LUD               | Land Use Designation                          |
| LWD               | large woody debris                            |
| MG                | middleground                                  |
| MM LUD            | Minerals Land Use Designation                 |
| MBF               | thousand board feet                           |
| MDP               | mineral development potential                 |
| MEP               | mineral exploration potential                 |
| MIRF              | Model Implementation Reduction Factor         |
| MIS               | Management Indicator Species                  |
| MMBF              | million board feet                            |
| MOU               | Memorandum of Understanding                   |
| National Register | National Register of Historic Places          |
| NEPA              | National Environmental Policy Act             |
| NFMA              | National Forest Management Act of 1976        |
| NHPA              | National Historic Preservation Act            |
| NIC               | non-interchangeable component                 |
| NMFS              | National Marine Fisheries Service             |
| NFS               | National Forest System                        |
| NPS               | National Park Service                         |
| NRDC              | Natural Resources Defense Council             |
| NVCS              | National Vegetation Classification Standard   |
| NVUM              | National Visitor Use Monitoring               |
| NWI               | National Wetland Inventory                    |
| OGR               | old-growth reserve                            |
| OHV               | off-highway vehicle                           |
| ORV               | off-road vehicle                              |
| P                 | Primitive                                     |

|        |   |
|--------|---|
| PAOT   | persons at one time                               |
| PNV    | Present Net Value                                 |
| POG    | productive old growth                             |
| POW    | Prince of Wales                                   |
| PPI    | Producer Price Index                              |
| ppm    | parts per million                                 |
| R      | Rural   |
| RARE   | Roadless Area Review and Evaluation               |
| RM     | Roaded Modified                                   |
| RN     | Roaded Natural                                    |
| RNA    | Research Natural Area                             |
| ROD    | Record of Decision                                |
| ROS    | Recreation Opportunity Spectrum                   |
| RPA    | Resources Planning Act of 1974                    |
| RVD    | Recreation Visitor Day                            |
| SATP   | Southeast Alaska Transportation Plan              |
| SDEIS  | Supplemental Draft Environmental Impact Statement |
| SEACC  | Southeast Alaska Conservation Council             |
| SEIS   | Supplemental Environmental Impact Statement       |
| SHPO   | State Historic Preservation Office                |
| SIO    | Scenic Integrity Objective                        |
| SPM    | Semi-Primitive Motorized                          |
| SPNM   | Semi-Primitive Non-Motorized                      |
| TES    | threatened, endangered, and sensitive             |
| TRUCS  | Tongass Resource Use Cooperative Survey           |
| TTRA   | Tongass Timber Reform Act of 1990                 |
| U      | Urban   |
| USGCRP | U.S. Global Change Research Program               |
| USDA   | United States Department of Agriculture           |
| USDI   | United States Department of the Interior          |
| USFWS  | U.S. Fish and Wildlife Service                    |
| USGS   | U.S. Geological Survey                            |
| VCU    | Value Comparison Unit                             |
| VQO    | Visual Quality Objective                          |
| WAA    | Wildlife Analysis Area                            |
| WARS   | Wilderness Attribute Rating System                |
| WTP    | willingness to pay                                |

## **Contents**

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# **CHAPTER 1**

## **PURPOSE AND NEED**

# Purpose and Need

## Introduction

Forest land and resource management planning is a process for developing, amending, and revising land and resource management plans for each of the National Forests in the National Forest System (NFS). Forest plans are required by the National Forest Management Act of 1976 (NFMA). The 16.8-million-acre Tongass National Forest was the first forest to complete a Land and Resource Management Plan (Forest Plan or Plan) under the NFMA in 1979. The original Forest Plan was amended in 1986 and 1991 and revised in 1997. A Supplemental Environmental Impact Statement (SEIS) was completed in 2003, which further evaluated roadless areas for their wilderness potential. The revised Plan has been amended 24 times since 1997, primarily to adjust Old-Growth Habitat Reserve boundaries and for electronic/communication site designation.

A recent Ninth Circuit Court ruling (2005) and the 5-Year Plan Review (completed in January 2005) indicated the need to amend the current Tongass National Forest Land and Resource Management Plan. This Final EIS responds to the Court and the 5-Year Review by thoroughly analyzing six alternatives for amending the Plan in addition to the No-Action Alternative (Alternative 5). The analysis is being published in two volumes: the first volume contains the main EIS, and the second volume contains the appendices to the EIS. A separate document titled Land and Resource Management Plan (Forest Plan or Plan) is also being published and represents the complete Forest Plan including all amendments. This document represents the Forest Plan that is used in all alternatives, except for differences that are outlined in Chapter 2. Finally, the Record of Decision (ROD), describing the decision and rationale for that decision, is also being published.

This EIS analyzes a possible amendment to the current Forest Plan and is tiered to the 1997 Tongass Land Management Plan Revision EIS and the 2003 Supplemental EIS for Roadless Area Evaluation for Wilderness Recommendations.

## Forest Planning History on the Tongass National Forest

NFMA, passed in 1976, required each national forest to develop a land and resource management plan and revise its plan every 10 to 15 years. The Tongass became the first forest to complete a Forest Plan under NFMA in April 1979. The Alaska National Interest Lands Conservation Act (ANILCA) passed December 2, 1980. The 1979 Forest Plan was amended in 1986, reflecting changes mandated by ANILCA. The Forest Plan revision process began in 1987 and a Draft EIS was published in June 1990. In November 1990, the Tongass Timber Reform Act (TTRA) was passed. The Forest Plan was amended in February 1991 to incorporate the TTRA changes. The Forest Plan Revision process continued with a Supplement to the Draft EIS published in September 1991, which incorporated all changes required by TTRA and evaluated a new set of alternatives. Because Congress had just acted on the wilderness issue following completion of the June 1990 Draft EIS, the Forest Service did not reconsider roadless areas for potential wilderness recommendation. The Forest Service prepared a Final EIS in the fall of 1992, but did not publish an associated Record of Decision (ROD). The Regional Forester found there was new information that should be collected to respond to 36 CFR 219.19. That process led to the 1997 Final EIS and the Forest Plan Revision ROD (1997 ROD).

The 1997 Forest Plan was the subject of 33 separate appeals by organizations and individuals. In 1999, the Under Secretary of Agriculture affirmed the Regional Forester's decision regarding all 33 appeals, based on the 1997 Tongass Forest Plan Revision Final EIS and planning record. The Under Secretary also issued a new ROD (1999 ROD) for the 1997 Tongass Land Management Plan Revision.

# 1 Purpose and Need

Two lawsuits challenged the 1997 and 1999 RODs in the U.S. District Court for the District of Alaska. The Alaska Forest Association and some Southeast Alaska communities challenged many aspects of the 1997 Plan and the process by which the 1999 ROD was issued. The Sierra Club and other environmental groups challenged the lack of wilderness area consideration and potential recommendations in the 1997 Plan Revision, FEIS and ROD. The Court issued a single opinion for both cases in March 2001.

In the Alaska Forest Association case (*Alaska Forest Ass'n v. United States Dep't of Agric.* No. J99-0013 CV [JKS] [D. Alaska]), the U.S. District Court upheld the 1997 ROD against all challenges, but held that the 1999 ROD was not properly adopted. The Court vacated the 1999 ROD and enjoined the Forest Service from implementation. The Court further directed the Forest Service to prepare an SEIS addressing the changes from the 1997 Tongass Forest Plan. Because of the extensive public involvement and scientific review in the 1997 ROD, and its thorough policy and legal review of the administrative appeal process and by the District Court, the Forest Service did not propose changes to the 1997 ROD similar to those enjoined by the District Court.

In the Sierra Club challenge of the 1997 Tongass Forest Plan Revision FEIS (*Sierra Club v. Lyons*, No. J00-0009 CV [JKS] [D. Alaska]), the Ninth Circuit Court found the 1997 Tongass Forest Plan should have considered making wilderness recommendations in the Final EIS. The Court ordered the Forest Service to prepare an SEIS evaluating wilderness recommendations for roadless areas on the Tongass and provide the relative contribution to the National Wilderness Preservation System in its Analysis of the Management Situation. The Forest Service issued a Final SEIS and ROD for Roadless Area Evaluation for Wilderness Recommendations in February 2003.

The Natural Resources Defense Council (NRDC) filed a lawsuit (referred to as NRDC I) in the U.S. District Court of Alaska in December 2003 challenging the 1997 Forest Plan and six timber sales. In January they filed a separate lawsuit on a seventh timber sale (referred to as NRDC II) and another lawsuit challenging an eighth sale in March 2004 (referred to as NRDC III). The District Court upheld the 1997 Forest Plan and related National Environmental Policy Act (NEPA) documents on all claims in September 2004. NRDC appealed this ruling to the Ninth Circuit Court of Appeals. The Ninth Circuit Court issued a ruling on NRDC I and NRDC II in August 2005. It found inadequacies primarily relating to the NEPA process for the 1997 Forest Plan. These inadequacies dealt with the timber demand estimates, the range of alternatives related to timber demand, and the cumulative effects analysis related to activities on non-NFS lands. While this process was taking place, the Forest completed a 5-Year Review of the Forest Plan. This review identified a number of items that could lead to adjustments to the Plan.

## Purpose and Need

The purpose and need for this EIS is to respond to the Ninth Circuit Court's decision in *Natural Resources Defense Council vs. U.S. Forest Service* (421 F.3d 797, August 5, 2005). In that decision, the Court held that the EIS and ROD for the Forest Plan adopted in 1997 had errors relating to the use of projected market demand for timber, the range of alternatives considered relative to the market demand calculations, and the cumulative effects of activities on non-NFS lands. In addition, there is a need to consider adjustments to the Plan based on information generated during the recent 5-Year Review of the Forest Plan. Therefore, the purpose and need for this EIS primarily relates to the August 2005 Court decision, the 5-Year Plan Review, and other minor clarifications and updates.

## Forest Location and Description

The 16.8-million-acre Tongass National Forest (Tongass or Forest) occupies about 7 percent of the area of Alaska. The Tongass is located in the southeastern portion of the state (the area commonly called the panhandle of Alaska or Southeast Alaska) and extends from Dixon Entrance in the south to Yakutat Bay in the north, and is bordered on the east by Canada and on the west by the Gulf of Alaska. The Tongass extends approximately 500 miles north to south and approximately 120 miles east to west at its widest point. Figure 1-1 is a vicinity map of the Forest.

The Tongass includes a narrow mainland strip of steep, rugged mountains and icefields and more than 1,000 offshore islands known as the Alexander Archipelago. Together, the islands and mainland have nearly 11,000 miles of meandering shoreline, with numerous bays and coves. A system of seaways separates the many islands and provides a protected waterway called the Inside Passage. Federal lands comprise about 95 percent of Southeast Alaska, with about 80 percent in the Tongass National Forest and most of the rest in Glacier Bay National Park and Preserve. The remaining land is held in state, Native corporations, and other private ownerships.

Most of the area of the Tongass is wild and undeveloped. Approximately 73,000 people inhabit Southeast Alaska, primarily in 32 communities located on islands or mainland coastal areas. Only eight of the communities have populations greater than 1,000 persons. Most of these communities are surrounded by, or adjacent to, NFS land. Only three communities are connected to other parts of the mainland by road: Haines and Skagway in the north, and Hyder in the southeast.

The economies of Southeast Alaska's communities rely on the Tongass National Forest to provide natural resources for uses such as fishing, timber harvesting, recreation, tourism, mining, and subsistence. Maintaining the abundant natural resources of the Forest, while providing opportunities for their use, is a major concern of Southeast Alaska residents.

Ranger District offices on the Tongass National Forest are located in Yakutat, Juneau, Hoonah, Sitka, Petersburg, Wrangell, Thorne Bay, Craig, and Ketchikan. There are also two National Monuments, Admiralty Island with an office in Juneau and Misty Fiords with an office in Ketchikan (Figure 1-1).

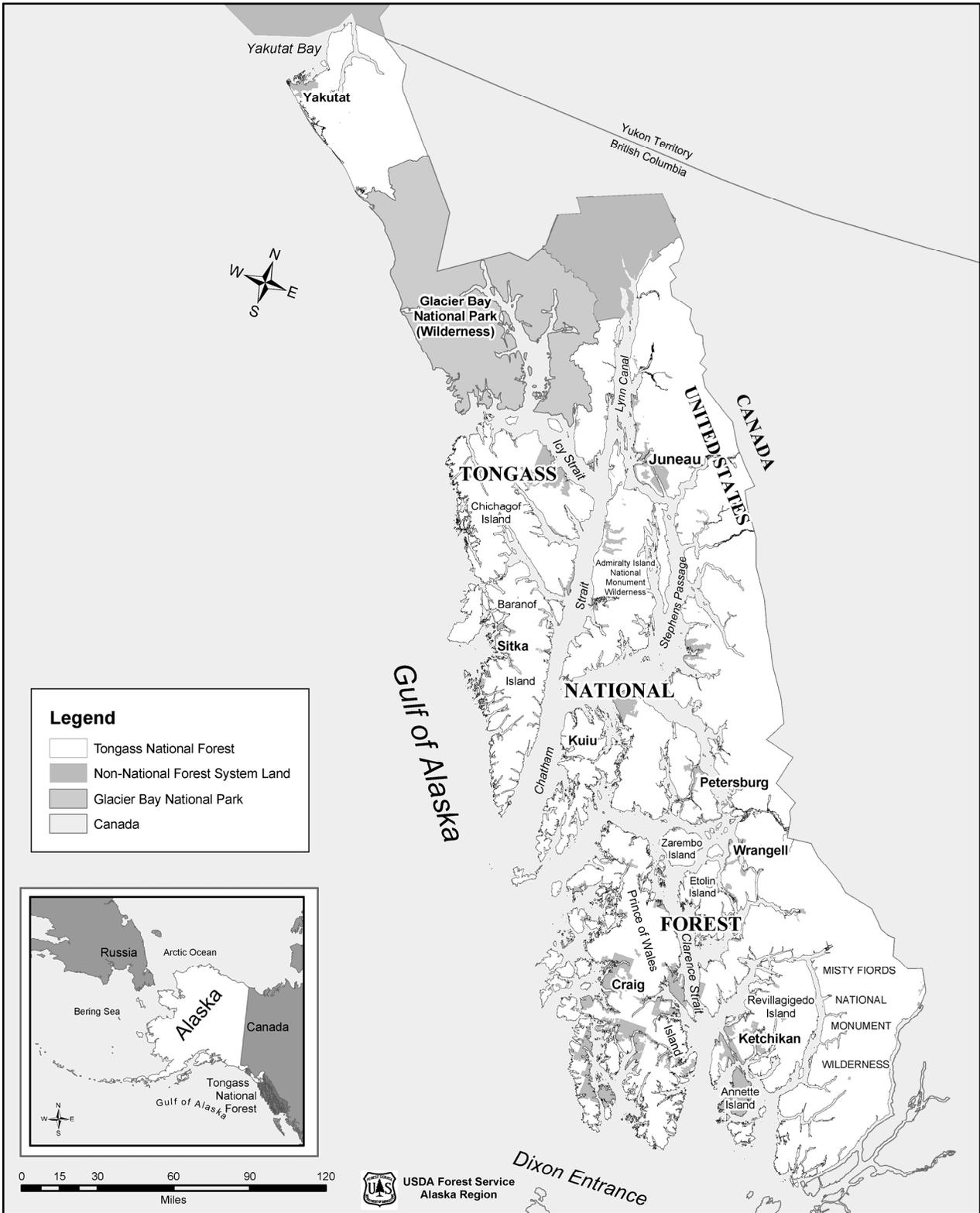
## Public Issues

Identification of issues helps define or predict the resources or uses that could be most affected by the management of NFS lands. These issues are used as a basis to formulate management alternatives or to measure differences between alternatives.

Ten public issues were originally identified in 1988 for the Forest Plan Revision. These original issues included scenic quality, recreation, fish habitat, wildlife habitat, subsistence, timber harvest, roads, minerals, roadless areas, and local economy. The 1991 Forest Plan Revision Supplemental Draft EIS (SDEIS) added an additional concern, identifying and considering for recommendation potential wild, scenic, and recreational rivers.

After the release of the 1991 SDEIS, considerable new information pertaining to the Tongass Forest Plan Revision became available. Out of this information emerged five additional issues, determined by the Regional Forester to need more study and evaluation before a final revised Forest Plan could be adopted. Some of these issues were aspects or extensions of the ten public issues previously considered; others were new as issues or had not been considered as issues in themselves. The five issues were wildlife viability, fish habitat, karst and caves, alternatives to clearcutting, and socioeconomic considerations. These issues were assessed in the 1996 Revised SDEIS and the 1997 Tongass Forest Plan Revision Final EIS.

# 1 Purpose and Need



**Figure 1-1.**  
**Tongass National Forest Vicinity Map**

The 2003 SEIS reviewed and evaluated roadless areas and analyzed alternative groupings of roadless areas for wilderness recommendations. Two broad issue categories, referred to as key issues, were identified as the major issues driving the alternatives of the SEIS analysis. They included 1) the long-term protection of roadless areas and associated values, and 2) the social and economic well-being of the communities of Southeast Alaska.

## Public Input

The scope of this EIS was initially determined by the Court in its 2005 ruling, and by the 5-Year Review of the Forest Plan. Additional information was considered to help clearly define the issues and for use in the development and analysis of alternatives. For this Final EIS, comments and information from a wide variety of public input that related to amending the Forest Plan were considered. This information included the following:

- Public comments generated during the 1997 Tongass Forest Plan Revision process;
- Tongass Forest Plan Revision appeals;
- Public input specific to the Tongass National Forest on the Forest Service's 2001 National Roadless Area Conservation Rule;
- Public comments generated relative to the 2003 Supplemental EIS;
- Public input expressed during project-level NEPA analyses over the past 10 years or so; and
- Public input received in response to the Notice of Intent and the Web site for this EIS.

The planning record of the Tongass includes public input encompassing most of the last 2 decades. Of special note are the extensive public meetings held in Southeast Alaska for the 1997 Forest Plan Revision, the 2001 National Roadless Area Conservation Rule, and the 2003 SEIS.

In addition to the above, public involvement has occurred during the development of this EIS. Public involvement activities that have taken place during this time frame include the following:

- The Notice of Intent was published in the Federal Register in March 2006.
- A Forest Plan Adjustment Web site was developed in January 2006 and has been maintained to inform and engage the public since then. It is updated as new information is developed or published and provides a mechanism for public input. Several hundred comments and questions were received through the Web site or via emails associated with the Web site in the first few months of operation.
- A Weblog regarding the Forest Plan adjustment effort was established in July 2006 and was continually maintained as another method of public communication.
- In response to the above items, a number of letters were received containing comments regarding the issues and alternatives. These included letters from environmental organizations, the timber industry, Southeast Alaska community organizations, and a number of individuals from Southeast Alaska and across the nation.

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- Government-to-government consultation has been conducted throughout the process, and is ongoing, with federally recognized Tribes.
- A number of group-specific meetings have also occurred with various organizations (including Alaska Native groups).
- A variety of news releases were issued relative to the Forest Plan adjustment throughout the process.
- A series of ongoing meetings, hosted by the National Forest Foundation and The Nature Conservancy, known as the Tongass Futures Roundtable, have resulted in considerable discussion of Tongass management issues among a broad spectrum of individuals and groups interested in the future of Southeast Alaska since May 2006.
- The input received prior to issuance of the Draft EIS was reviewed and a summary of this synthesis is presented as Appendix A (Issue Identification) to the Final EIS.
- A Draft EIS and Proposed Forest Plan were released on January 12, 2007. This began a 90-day comment period, which was later extended to 108 days. The comment period closed on April 30, 2007.
- During the comment period, open houses and public hearings were held in 24 Alaska communities. In addition to comments on the Draft EIS, the hearings provided opportunity to hear concerns related to subsistence and Alaska Native issues.
- On March 22, 2007, an open house and public hearing was held on the internet, to solicit public comment in an open forum from individuals living anywhere in the world.
- Over 84,000 comment documents were received, including individual letters, form letters, emails, hearing testimony, and comments submitted directly via the Forest Plan Adjustment Web site. Slightly more than 2,000 of these were classified as individual comment documents and the others were classified as form letters and emails. The individual comment documents were subdivided into approximately 5,500 individual comments. Responses were received from all 50 states and 89 foreign countries. A summary of the substantive comments and Forest Service responses to those comments can be found in Appendix H.

## The Three Focus Issues

### Key Issues

Any alternative that proposes to change the Forest Plan could affect resources and/or outputs relative to the current Forest Plan. Therefore, Chapter 3 of the EIS shows the effects of the various alternatives on all relevant resources and evaluates their effects relative to all of the issues and concerns previously identified during the 1997 plan revision process. However, based on the purpose and need of this EIS and the public input received during the current EIS process, some issues are more likely to influence the comparison among alternatives and represent the major issues to be evaluated. These issues were grouped into three broad issue categories, referred to as the key issues. These key issues are the major issues driving the alternatives and analyses.

**Key Issue 1 – Protection of high value roadless areas from road development and timber harvest activity on the Tongass National Forest is of local and national importance, particularly for wildlife and biodiversity, recreation, and tourism.**

Many people believe roadless areas should be allowed to evolve naturally through their own dynamic processes and should be afforded protection that ensures this will occur. The Tongass includes very large undeveloped land areas with several portions of the Forest consisting of contiguous roadless areas that exceed 1 million acres and represent large, unfragmented blocks of wildlife habitat. This large scale of roadless lands does not exist on any other National Forest, except the Chugach National Forest in Southcentral Alaska.

Roadless areas are considered important because of their wildlife habitat and recreation values and their importance for tourism. They are also important because of the passive-use and ecosystem services values they provide.

Passive-use values represent values that individuals assign to a resource independent of their use of that resource. Typically this includes existence, option, and bequest values, and represents the value individuals obtain from knowing that expansive roadless areas exist, knowing that they are available to visit in the future should they choose to do so, and knowing that they are available for future generations to inherit. There is interest in preserving large portions of the Tongass because so much of it is in a natural condition, unlike most other national forests, and because the Forest represents a significant portion of the world's remaining temperate rainforests.

Ecosystem services represent the services provided to society by healthy ecosystems. These services and benefits include what some consider to be long-term life support benefits to society as a whole. Examples of ecosystem services include watershed services, soil stabilization and erosion control, improved air quality, climate regulation and carbon sequestration, and biological diversity.

Indicators: Analysis relative to this issue compares the amount and proportion of land protected in non-development Land Use Designations (LUDs); the amount of inventoried roadless areas that would be protected under each alternative; and the amount of productive old-growth forest that would be protected under each alternative. Also, the values of the lands protected are considered. Non-use or passive-use values are discussed qualitatively and with examples provided from other studies.

**Key Issue 2 – The Tongass National Forest needs to seek to provide a sufficient timber supply to meet the market demand and help maintain a vibrant economy in Southeast Alaska.**

TTRA (Section 101) requires the Forest Service to seek to provide a supply of timber from the Tongass National Forest that meets the annual market demand and the market demand for each planning cycle, consistent with providing for the multiple-use and sustained yield of all renewable resources. With the cancellation of long-term timber contracts and the closure of two Southeast Alaska pulp mills in the 1990s (discussed in detail in Chapter 3 Environment and Effects), current demand for Alaska's National Forest timber depends on markets for sawn wood and the option of exporting manufacturing residues and lower grade logs. Future or planning cycle demand scenarios cover a wide range of issues and depend on rates of economic growth in key markets, conditions faced by competitors, and the rate of investment and innovation in Alaskan manufacturing.

# 1 Purpose and Need

Over the past half a century, the timber industry has been a major component of the economy of Southeast Alaska. However, with the closure of two Southeast Alaska pulp mills and the growth of tourism, timber has played a lesser role. Because the economy of Southeast Alaska is based on relatively few industries, maintaining an active timber industry is important for maintaining a well-diversified economy.

Indicators: Analysis relative to this issue compares the likely demand for timber based on capacity of the local industry and the amount of harvest made available to meet that demand. It also considers the type of wood (sawlogs and utility wood) made available and the usefulness of that wood type to the local industry, as well as the amount of timber that would be available from state and private sources. Finally, it considers the effects on the regional and national economies and the effects on the local communities.

### **Key Issue 3 – Protection of the wildlife habitat and biodiversity of the Tongass National Forest is of local and national significance and is affected by road development and timber harvest activities.**

The Tongass National Forest supports a unique and important assemblage of wildlife including the largest population of brown bears and breeding bald eagles in the world, species of high importance for subsistence (e.g., Sitka black-tailed deer), an extensive array of endemic mammals and other species, and a large number of species that are at least partially dependent on old-growth habitats (e.g., marten and goshawk). Populations of many of these species and the biodiversity of Southeast Alaska are affected by timber harvest and the development of roads.

Although less than 10 percent of the productive old-growth habitat on the Tongass has been converted to young growth, the percentage is much higher for certain types of old growth, such as lowland and large-tree old growth. In addition, a high percentage of non-NFS lands have been harvested at a much higher rate. Therefore, the cumulative effects of harvest and road building on wildlife in Southeast Alaska are greater than the effects for the Tongass by itself.

Indicators: Analysis relative to this issue compares the amount of productive old-growth forest that would be protected under each alternative, as well as the percentages of biogeographic provinces that would be protected in reserves. It also considers the role of the managed lands (development LUDs) in providing wildlife habitat. It rates the alternatives in terms of the expert panel ratings conducted for the 1997 Forest Plan Revision EIS. Habitat changes, as documented by habitat amounts, changes in road densities, and habitat models are also used as indicators. Finally, cumulative harvest and road development on non-NFS lands is quantified and evaluated in conjunction with harvest and road development on NFS lands.

### **Changes between the Draft EIS and Final EIS**

A number of updates and changes were made in the Final EIS in response to new information and to comments received on the Draft EIS. The main areas of change are described below:

1. Refinements were made to base Geographic Information System (GIS) coverages such as ownership, past harvest, roads, and LUDs to reflect updates due to changes in the existing condition and refinement of inventory data.
2. Because of refinements made to the base GIS coverages, the acreages and mileages associated with the existing condition and the alternatives changed, in many cases, and were updated throughout the document. Sometimes analysis methods were also refined, which resulted in changes to the quantification of effects.

3. Expanded discussion and analysis and incorporation of additional scientific references and studies were included in many sections of the Final EIS. This expanded discussion and analysis included elaboration on the risk and scientific uncertainty associated with issues.
4. The *Biodiversity* section of Chapter 3 was expanded to more fully address issues related to disproportionate past harvest, harvest on non-NFS lands and related cumulative effects, and effects on intact watersheds.
5. Alternative 1 was modified in response to comments on the Draft EIS. It now has a significantly smaller timber management land base, and excludes all inventoried roadless areas and many higher value roaded areas from commercial timber management. Examples include areas such as all of Kuiu, Baranof, and Kruzof Islands, much of Chichagof Islands, and all mainland areas.
6. Alternative 7 was modified in response to comments on the Draft EIS. It now deletes the requirement for buffers on Class III streams.
7. Further refinements and changes to the proposed Forest Plan were developed between the Draft EIS and Final EIS.
8. Appendix B was substantially updated and additional information on modeling and analysis techniques was added.
9. Appendix C was substantially revised based on updated and new information on the likelihood of various land adjustments.
10. A new Appendix D was developed, which presents background, rationale, assumptions, and additional analyses related to the old-growth conservation strategy, Wildlife Standards and Guidelines, and wildlife viability analyses as they relate to the Final EIS alternatives.
11. Although extensive mapping, quantification, and analysis of past harvest on non-NFS lands was completed for the Draft EIS, a more extensive analysis of past old-growth harvest, including the past disproportionate harvest of several categories of old growth, and the effects of this harvest, was completed and documented in the Final EIS, primarily in the *Biodiversity* section of Chapter 3; a catalogue of past harvest is presented in Appendix E.
12. The Biological Assessment for threatened and endangered species that was originally developed for the 1997 Forest Plan Revision was updated and refined and included as Appendix F.
13. Appendix G was developed to summarize new information on timber demand and supply on the Tongass National Forest.
14. A new Appendix H was developed, which summarizes the comments received on the Draft EIS and the Forest Service responses to these comments. Copies of the letters received from agencies and elected officials, including tribal governments, are also included.

## Organization of the Document

This Final EIS is organized into several chapters and a number of appendices. Chapter 1, "Purpose and Need," describes the reasons for proposing and completing a plan amendment. Chapter 2, "Alternatives," describes the process used to develop alternatives, explains the components of a Forest Plan, discusses alternatives not considered in detail, and describes the No-Action Alternative and Proposed Action Alternative as well as five other alternatives. Maps of the proposed LUDs under each alternative are also displayed in Chapter 2. Finally, a comparison

# 1 Purpose and Need

of these alternatives based on the issues and significant environmental effects is presented.

The discussions of the “Affected Environment” and the “Environmental Consequences” are combined in Chapter 3, “Environment and Effects.” This is done so the environmental consequences (effects) of the alternatives on forest resources, and the background information needed to understand these consequences, are discussed together for each resource. The focus is on significant effects, with the analysis centered on the public issues. Chapter 3 also begins with a general description of the Tongass National Forest.

The Final EIS also includes a list of preparers; a list of agencies, organizations, and persons receiving copies of the document; a bibliography; a glossary; and an index (Chapters 4 through 8). Appendices to the Final EIS are contained in a separate volume (Final EIS Volume II). They provide more background on planning actions, certain resources and analyses, modeling and analysis techniques, a catalogue of past harvest, and a summary of the comments on the Draft EIS with Forest Service responses (Appendix H).

In addition to the two Final EIS volumes, three separate documents are associated with the Final EIS. First, a separate Summary booklet is included within the CD case. Second, the Record of Decision (ROD), which discloses the decision and its rationale, is published along with the Final EIS. Third, the Forest Plan, which includes goals and objectives, the management prescriptions for each LUD, Forest-wide standards and guidelines, plan implementation direction, a monitoring and evaluation plan, and related appendices, accompanies the ROD. In addition, a map packet includes color maps of the LUDs for each alternative and a ROD map that displays the LUDs associated with the decision.

The CD version of the Final EIS, Forest Plan, and ROD includes all of the documents described above, plus additional maps. As noted above, a Summary booklet is included in the CD case. Additional information, maps, and reference documents used in the Tongass Forest Plan Amendment process are contained in the planning record. Many of these documents and records are also available on the Forest Plan Adjustment Web site (<http://tongass-fpadjust.net/>). These can also be accessed through the main Tongass Web site ([www.fs.fed.us/r10/tongass](http://www.fs.fed.us/r10/tongass)). The planning record in its entirety is incorporated here by reference.

# **CHAPTER 2**

## **ALTERNATIVES**

# Alternatives

## Introduction

Chapter 2 is divided into four parts:

1. A discussion of how alternatives were developed and of what constitutes an alternative;
2. A discussion of alternatives considered but eliminated from detailed study;
3. A full description of the alternatives that are considered in detail; and
4. A comparison of the alternatives considered in detail.

A color map for each of the seven alternatives considered in detail is included in the *Map Section* of the CD version of the EIS and in the *Map Packet* accompanying the hard copy version. These maps are also available on the EIS Web site at [www.tongass-fpadjust.net](http://www.tongass-fpadjust.net). Each alternative map shows the locations of the Land Use Designations (LUDs) for that alternative.

## Alternative Development Process

### What a Forest Plan Includes

*Land management planning* may be compared to city, county, or borough zoning. Just as areas in a community are zoned as commercial (allowing business uses), industrial (allowing factories), or residential (allowing only homes, schools, etc.), the forest is also zoned to allow, or not allow, various uses and activities. Land management (forest plan) zoning is done through the use of LUDs. This Forest Plan only applies to federal lands within the Tongass National Forest.

*Land Use Designations* specify ways of managing an area of land and the resources it contains. LUDs may emphasize certain resources (such as remote recreation or old-growth wildlife habitat) or combinations of resources (such as providing for scenic quality in combination with timber harvesting). Each LUD has a detailed management prescription, which includes standards and guidelines.

*Prescriptions* are specific actions or treatments used in the management of forest resources, such as two-age timber harvest methods. Each management prescription specifies what is allowed to be considered for site-specific project proposals, and under what conditions. *Standards and guidelines* impose limitations on how, where, and when management activities are carried out, usually for specific resource protection purposes. Management prescriptions and standards and guidelines only apply to federal lands.

LUDs are assigned, or allocated, to specified areas of land. Under any one alternative, a given area of land will generally have only one LUD assigned to it; however, the Minerals and Transportation and Utility Systems LUDs are overlay LUDs and can apply to a given piece of ground when and if minerals or transportation/utility systems are to be developed on that piece of ground. In some other cases, two LUDs may apply to the same area, such as a Wild River within a Wilderness. In these cases, the more restrictive direction always applies. Some LUDs, such as Wilderness and LUD II, are congressionally designated and represent permanent allocations.

Forest resource use opportunities, such as timber harvesting or recreation, can be made available in different amounts. What lands to make available for timber harvest or how much of a particular kind of recreation opportunity to provide are questions that land management planning must also address. It is not always possible to provide all resource use opportunities in the amounts desired by

## 2 Alternatives

everyone. The National Forest Management Act mandates the Forest Service to provide for multiple use and the sustained yield of the products and services obtained from the Forest.

The alternatives themselves are usually designed around a “framework” that establishes how much emphasis is placed on each of the key issues or other issues. The EIS alternatives are directly related to the issues described in Chapter 1. How alternatives were developed to address the issues is discussed below. The *Comparison of Alternatives* section at the end of this chapter also discusses ways in which the alternatives address the issues.

### How Alternatives are Described

Each alternative for this EIS is presented in the same format. This includes the following components:

- **Framework.** The basis for alternative design.
- **Desired Condition.** A general description of the ecological, physical, and economic/social conditions that are expected in the future under each alternative framework.
- **Land Use Designations.** The acreages allocated to each Land Use Designation.
- **Standards and Guidelines and Management Prescriptions.** What changes to the existing Forest-wide standards and guidelines and management prescriptions are proposed?
- **Selected Outputs and Measure.** A summary of predicted outputs and measures associated with each alternative.

### Land Use Designations

The alternatives are constructed using the LUD allocations defined in the 1997 Tongass Forest Plan as the base. This base represents the current Tongass Forest Plan and consists of Alternative 11 in the 1997 Tongass Forest Plan Revision Final EIS, adjusted by the 1997 Record of Decision (ROD) and subsequent non-significant Forest Plan Amendments made for projects since 1997.

The LUD allocations of the current Tongass Forest Plan define the No-Action Alternative (Alternative 5). The LUD allocations for the Proposed Action alternative (Alternative 6) are very similar to the No Action, but incorporate some adjustments. The other five alternatives differ more substantially from the No Action and Proposed Action in terms of their LUD allocations.

The management prescriptions for each specific LUD under the No Action alternative are the same as under the current Forest Plan (see Chapter 3 of the current Forest Plan, USDA Forest Service 1997b). These management prescriptions are summarized below, following a discussion of current Forest Plan LUDs. The management prescriptions for the other alternatives incorporate very slight modifications; these modifications are fully described in the amended Forest Plan that accompanies this Final EIS, and are summarized in the alternative descriptions, along with the exceptions to the amended Forest Plan.

### Wilderness and National Monument

- **Wilderness and Wilderness National Monument** – Manage for the protection and perpetuation of essentially natural biophysical and ecological conditions and provide outstanding opportunities for solitude, primitive recreation, and scientific and educational uses, consistent with ANILCA, the Wilderness Act, and TTRA. Roads are normally not permitted and use of mechanical transport and motorized equipment is limited.
- **Non-wilderness National Monument** – Manage the non-wilderness portions of Admiralty Island and Misty Fjords National Monuments to facilitate development of significant mineral resources and to ensure that mining activities are compatible, to the maximum extent feasible, with the purposes for which the Monuments were established.

### Mostly Natural Setting

- **LUD II** – Manage these Congressionally designated areas in a roadless state to retain the wildland character. Wildlife and fish habitat improvement and primitive recreational facility development may be permitted. Timber harvesting is limited to insect and disease control. Roads will not be built except to serve mining and other authorized activities and vital Forest transportation and utility system linkages. (These areas are sometimes referred to as “legislated LUD II.”)
- **Research Natural Area** – Manage forest resources for research and education and/or to maintain natural diversity. Current natural conditions are maintained where possible. No timber harvest is allowed.
- **Enacted Municipal Watershed** – Manage enacted municipal watersheds to meet State Water Quality Standards for domestic use. Timber harvest is limited to insect and disease control; however, timber may be removed under conditions that safeguard the quantity and quality of water. Roads are generally limited to those needed to administer the municipal watersheds.
- **Old-growth Habitat** – Maintain a diversity of old-growth conifer habitats in their natural condition to favor old-growth associated fish and wildlife species. No timber harvesting will be scheduled and roads will be located outside the area when possible.
- **Semi-remote Recreation** – Provide motorized and non-motorized recreation opportunities in natural and natural-appearing environments where interaction with others is low and the opportunity for independence and self-reliance is moderate to high. Allow occasional concentrated recreation and tourism facilities in a natural-appearing setting. When present, roads are few and used primarily to expand and improve access to recreation opportunities or to permit access to other parts of the Forest and other ownerships. Timber harvest is limited to salvage of catastrophic events or beach log recovery.
- **Remote Recreation** – Provide recreation opportunities and experiences outside Wilderness in unmodified natural environments where interaction with other visitors is infrequent, and the opportunity for independence and self-reliance is high. Timber harvesting is limited to insect and disease control. Roads are generally absent.
- **Special Interest Area** – Provide for the inventory, maintenance, protection, and interpretation of areas with unique archeological, historical, recreational, scenic, geological, botanical, zoological, or paleontological features. No timber harvest is scheduled. Roads are normally not permitted unless compatible with interpretive objectives.

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- **Wild River** – Maintain and enhance the outstandingly remarkable values of river segments that qualify the river to be classified a Wild River and recommended in the 1997 Tongass Forest Plan ROD. Shorelines are primitive and undeveloped. Timber harvesting is limited to insect and disease control. Roads are generally not present. Access is by trail, airplane, or boat.
- **Scenic River** – Maintain and enhance the outstandingly remarkable values of river segments which qualify the river to be classified a Scenic River and recommended in the 1997 Tongass Forest Plan ROD. Shorelines are largely undeveloped but may be accessible in places by roads. Timber harvesting is limited by the ability of the landscape to visually absorb the activity. Roads are designed to be compatible with the landscape.
- **Recreational River** – Maintain and enhance the outstandingly remarkable values of river segments that qualify the river to be classified a Recreational River and recommended in the 1997 Tongass Forest Plan ROD. Shoreline development may occur and the river may be readily accessible by road. Timber harvesting is allowed with priority to maintain existing and proposed recreation sites within the corridor. Roads are permitted.

### Moderate Development

- **Experimental Forest** – Manage to provide a variety of long-term opportunities for Forest research and demonstration areas. Timber harvesting will occur only for these purposes. Roads may be developed to facilitate ongoing research.
- **Scenic Viewshed** – Management activities are not visually apparent to the casual observer in the near distance from visual priority travel routes and use areas. In the middle to background distance, activities are subordinate to the landscape character of the area. Timber harvest is allowed and roads are permitted.
- **Modified Landscape** – Manage for a variety of uses. Management activities are subordinate to scenic quality as seen in the near distance. In the middle to background distance, activities may dominate but are designed to be compatible with features found in the characteristic landscape. Timber harvest is allowed and roads are permitted.

### Intensive Development

- **Timber Production** – Manage the area to maintain and promote industrial wood production. These lands will be managed to advance conditions favorable for the timber resource and for long-term timber production. Roads are permitted.

### Overlay LUDs

- **Minerals** – Encourage the exploration and development of mineral resources in areas having high potential for mineral commodities, including nationally designated strategic and critical minerals. Until mineral activities are initiated, the area will be managed according to the underlying LUD.
- **Transportation and Utility Systems** – Emphasize existing and potential state-identified major public transportation and utility systems. Until transportation or utility systems are constructed, the area will be managed according to the underlying LUD.

**Development of Potential Alternatives**

As indicated by the Ninth Circuit Court of Appeals, there is a need to evaluate a wide range of alternatives that relate to varying degrees of development of roadless lands, while at the same time providing a supply of timber that corresponds with the full range of timber demand scenarios. Therefore, the array of EIS alternatives was designed to address a full range of roadless development and timber supply/demand levels. Adjustments to the standards and guidelines of the Forest Plan were also incorporated into various alternatives to address clarifications and updates identified as needed in the 5-Year Review and by Forest Service staff.

Basic tools used in the development of the alternatives were the recent timber demand projections (Brackley et al. 2006), the existing inventory of roadless lands, and various sources of information regarding the qualities of the roadless lands. In addition, because of the rigorous level of scientific review that went into designing the current conservation strategy, strong consideration was given to maintaining its elements. Other alternative proposals considered during the 1997 Forest Plan Revision and the 2003 Supplemental EIS processes were given consideration.

A total of 49 alternatives were considered as part of the alternative development process. Of these, 42 alternatives were eliminated from detailed study and are discussed in the following section (*Alternatives Eliminated from Detailed Study*). The remaining seven alternatives are considered in detail in this EIS.

The set of alternatives that are analyzed in detail were designed to fully bracket the range of timber demand scenarios identified by Brackley et al. (2006). Equally important, they were designed to range from very limited development of inventoried roadless areas to more intensive development within roadless areas. This range is captured by the seven alternatives.

Brackley et al. (2006) described four timber demand scenarios: limited lumber production, expanded lumber production, medium integrated industry, and high integrated industry. The following table compares the projected demand for 2022 under these four scenarios with the Allowable Sale Quantity (ASQ) identified for the second decade of each of the alternatives considered in detail (ASQ is discussed in more detail below in the *Alternatives Considered in Detail* section).

**Table 2-1  
Projected Demand for 2022 under Brackley et al.’s Four Timber Demand Scenarios**

| <b>Brackley et al. Demand Scenarios &amp; Projected 2022 Demand<sup>1</sup> (MMBF)</b> | <b>Alternatives Considered in Detail &amp; Second-Decade ASQ (MMBF)</b> |
|--|---|
| Scenario 1 – 68  | Alternative 1 – 49  |
| Scenario 2 – 187   | Alternative 2 – 152   |
| Scenario 3 – 204   | Alternative 3 – 203   |
| Scenario 4 – 342   | Alternative 5 – 267   |
|  | Alternative 6 – 267   |
|  | Alternative 4 – 342   |
|  | Alternative 7 – 421   |

<sup>1</sup> These figures include total volume that would need to be harvested to meet the demand projected by Brackley et al. 2006

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Alternatives 1 through 4 were designed to correspond with Scenarios 1 through 4, respectively, while also responding to other concerns. The discrepancies between the second decade ASQs for Alternatives 1 and 2 and projected demand for 2022 under Scenarios 1 and 2 reflect these concerns.

The ASQ for Alternative 1 is 19 MMBF (28 percent) below the projected demand of Scenario 1. There are several reasons for this difference. First, the purpose of Alternative 1 is to depict the current situation, meaning annual timber harvest levels over the last few years of around 50 MMBF. In addition, Alternative 1 responds to the court's direction and public comments by scheduling no timber harvest in roadless areas, as discussed below. This alternative also responds to recommendations from the public to avoid harvest on Kuiu Island. The ASQ of Alternative 2 is 25 MMBF (19 percent) below the projected demand of Scenario 2. The purpose of Alternative 2 is to display an alternative that restricts development activities to lower value roadless areas. Alternative 3 differs from Scenario 3 by only 1 MMBF; Alternative 4 matches Scenario 4 exactly.

### Alternatives Eliminated from Detailed Study

The Forest Plan revision process started in 1987 and resulted in the development of dozens of alternatives that were described in the Draft EIS (1990), Supplement to the Draft EIS (1991), Revised Supplement (1996), Final EIS (1997), and Supplemental EIS (2003). In addition, a 1992 draft version of the Final EIS included alternatives that became the basis of some 1996 Revised Supplement and 1997 Final EIS alternatives. Each of these alternatives was considered for detailed study and comparison in this EIS, in their original form or in a modified form. Altogether, 41 alternatives were considered for detailed study prior to the selection of the EIS alternatives—39 of these were based on previous alternatives and 2 were new ones. The 39 previous alternatives are summarized in Table 2-2.

These alternatives were considered in light of the key issues and the purpose and need. They ranged in allowable sale quantity (which is the maximum annual average amount of timber that can be sold from the suitable forest land base) from 0 to almost 700 MMBF per year. Development LUD acres in these alternatives ranged from a few hundred acres to almost 8 million acres and forest lands suitable for timber harvest ranged from 0 to over 2 million acres.

Five alternatives, which were largely based on previously developed alternatives, and two new alternatives were selected for detailed study. Therefore, 34 of the previously developed alternatives were considered, but eliminated from detailed study. The reasons for not selecting them were either that they were similar to and within the range of the selected alternatives, they were outside the range of timber demand estimates, or they would result in substantial changes to the current Forest Plan standards and guidelines that are not warranted based on the purpose and need or the key issues.

In addition to the 41 alternatives discussed above, 8 other alternatives were considered, but not evaluated in detail. Therefore, overall, 49 alternatives were considered and evaluated to varying degrees, with 7 of these being analyzed in detail and 42 being eliminated from further detailed study. The eight additional alternatives that were not analyzed in detail include three alternatives with timber volumes below the volume to be harvested under Alternative 1, one alternative described by The Nature Conservancy and Audubon Alaska, modified versions of Alternatives 4 and 7, an alternative proposed by the Southeast Conference, and a partial alternative proposed by the City and Borough of Yakutat. These eight alternatives are described in the following paragraphs.

**Table 2-2  
Tongass Forest Plan Alternatives Considered in Detail: 1990 – 2003**

| Alternative and Source | ASQ (MMBF annual) | Suitable lands (Acres X 1,000) | Non-Development LUDs (Acres X 1,000) | Development LUDs (Acres X 1,000) |
|------------------------|-------------------|--------------------------------|--------------------------------------|----------------------------------|
| 1 1997                 | 0                 | 0                              | 16,700                               | 200                              |
| 1 1996                 | 0                 | 74                             | 16,700                               | 200                              |
| 6 2003                 | 92                | 344                            | 15,700                               | 1,200                            |
| 8 2003                 | 96                | 351                            | 15,700                               | 1,200                            |
| 5 1997                 | 122               | 786                            | 12,100                               | 4,800                            |
| 4 1997                 | 130               | 845                            | 11,700                               | 5,200                            |
| 5 1996                 | 139               | 1,400                          | 12,100                               | 4,800                            |
| 4 1996                 | 145               | 1,507                          | 11,700                               | 5,200                            |
| 7 2003                 | 174               | 521                            | 14,300                               | 2,600                            |
| A 1990                 | 181               | 536                            | 13,600                               | 3,300                            |
| 5 2003                 | 209               | 589                            | 13,800                               | 3,100                            |
| 3 2003                 | 236               | 620                            | 13,500                               | 3,400                            |
| 3 1997                 | 256               | 795                            | 12,700                               | 4,200                            |
| 1 2003                 | 259               | 664                            | 13,200                               | 3,700                            |
| 2 2003                 | 259               | 664                            | 13,200                               | 3,700                            |
| 4 2003                 | 259               | 664                            | 13,200                               | 3,700                            |
| 11 1997                | 267               | 676                            | 13,200                               | 3,700                            |
| 3 1996                 | 278               | 1,188                          | 12,600                               | 4,300                            |
| E 1990                 | 280               | 717                            | 11,600                               | 5,300                            |
| A 1991                 | 298               | 1,173                          | 13,700                               | 3,200                            |
| 10 1997                | 300               | 924                            | 12,700                               | 4,200                            |
| 6 1997                 | 309               | 1,024                          | 12,100                               | 4,800                            |
| B 1991                 | 343               | 1,360                          | 13,000                               | 3,900                            |
| B 1990                 | 354               | 1,101                          | 12,900                               | 4,000                            |
| 6 1996                 | 362               | 1,400                          | 12,100                               | 4,800                            |
| 8 1996                 | 364               | 1,389                          | 10,500                               | 6,400                            |
| F 1990                 | 389               | 1,111                          | 11,000                               | 5,900                            |
| G 1990                 | 390               | 1,112                          | 11,000                               | 5,900                            |
| P 1991                 | 418               | 1,649                          | 11,700                               | 5,200                            |
| C 1990                 | 450               | 1,200                          | 10,500                               | 6,400                            |
| C 1991                 | 451               | 1,732                          | 11,200                               | 5,700                            |
| 2 1997                 | 463               | 1,180                          | 11,700                               | 5,200                            |
| D 1991                 | 472               | 1,818                          | 11,400                               | 5,500                            |
| 2 1996                 | 489               | 1,526                          | 11,700                               | 5,200                            |
| 9 1996                 | 513               | 1,869                          | 10,800                               | 6,100                            |
| 9 1997                 | 549               | 1,390                          | 10,800                               | 6,100                            |
| D 1990                 | 640               | 1,575                          | 9,100                                | 7,800                            |
| 7 1997                 | 640               | 1,575                          | 9,100                                | 7,800                            |
| 7 1996                 | 689               | 2,044                          | 9,100                                | 7,800                            |

Sources: 1990 Draft EIS, 1991 Supplement to the Draft EIS, 1996 Revised Supplement to the Draft EIS, 1997 Final EIS, and 2003 Supplemental EIS.

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### Zero to Very Low Volume (ASQ) Alternatives

Consideration was initially given to evaluating zero to very low volume alternatives and recommendations were also made in Draft EIS comments that various zero to very low volume alternatives should be considered for detailed evaluation. As a result, a no-commercial harvest alternative was considered, an alternative with an ASQ at a stable level significantly below Alternative 1 was considered, and a declining volume alternative that started with an ASQ near the Alternative 1 level, but declined over time, was considered. Partially in response to these comments, the development land base of Alternative 1 was significantly reduced and the ASQ was slightly reduced between the Draft EIS and the Final EIS. As a result, even Alternative 1 would produce only 28 MMBF of NIC I sawlogs (the type that could be utilized by the existing sawmills) on an annual basis. This volume is equivalent to less than 15 percent of the estimated mill capacity of the four largest existing sawmills, 11 percent of the estimated active installed processing capacity of all existing Southeast Alaska mills, and only 7 percent of the total processing capacity of existing Southeast Alaska mills. In addition, the recent actual mill output level has been about 35 MMBF. Even Alternative 1 is considered to be a non-sustainable alternative for the existing timber industry because it does not meet these volume levels (see *Economic and Social Environment*, Regional and National Economy, in Chapter 3). Because the three additional alternatives under consideration, by definition, would produce a significantly lower volume than Alternative 1, they would clearly not be sustainable for even a portion of the existing timber industry.

The Tongass Timber Reform Act requires the Forest Service “to seek to meet the market demand.” Providing a timber volume that would meet neither the current estimated annual demand nor the recent actual mill output levels, and which would produce only a fraction of estimated existing mill capacities, would clearly not be consistent with TTRA and, therefore, is determined to not be a reasonable alternative. Alternative 1 provides an alternative “sideboard” at the low end of the timber volume range that is already in the “non-sustainable” category.

### The Nature Conservancy/Audubon Alaska Alternative

A number of organizations suggested that they might generate a low-harvest alternative for consideration. The only low-harvest alternative that was described was one by The Nature Conservancy and Audubon Alaska in their Conservation Assessment for Southeast Alaska (Albert and Schoen 2007).

This alternative was defined based on modeling of relative ecological values and the ranking of relative suitability for timber production. It includes conservation priority watersheds, other watersheds to be managed for intact conditions, as well as timber production and integrated management watersheds. The EIS team determined that Alternatives 1, 2, and 3 captured the range defined by this alternative and they also represented alternatives that were similar to others that would be developed by other groups (e.g., they avoid the roadless areas and intact watersheds or different combinations of high-value roadless areas or intact watersheds).

### Modified Alternatives 4 and 7

A modified version of Alternatives 4 and 7 were evaluated for consideration. The modification involved replacing portions of the development LUDs in these alternatives with the Old-Growth Habitat LUDs from Alternative 6. It was determined that the modified Alternative 4 did not produce significantly more timber volume than Alternatives 5 and 6 and the modified Alternative 7 was not substantially different than Alternative 4. Therefore, these modified alternatives were well within the range of the existing alternatives and it was decided they did not need to be analyzed in detail.

### **Southeast Conference Alternative**

In its comments on the Draft EIS, the Southeast Conference (an association of municipalities, businesses, Native corporations and village councils, civic organizations, and individuals from Southeast Alaska) identified specific lands they believe should be allocated to the Timber Management LUD to allow for reestablishment of an integrated timber industry in Southeast Alaska. These lands were reviewed by the EIS team and it was determined that the vast majority of these lands (plus additional lands) were included as development LUDs in Alternative 7 and most of them were also included in several other alternatives. The lands that were not included were identified as Old-Growth Habitat, Special Interest Area, or Experimental Forest LUDs in most of the alternatives. It was determined that the current range of alternatives captured these lands and there was no need to develop a new alternative based on them.

### **City and Borough of Yakutat Alternative**

In its comments on the Draft EIS, the City and Borough of Yakutat recommended a modification of Alternative 2 for the Yakutat Ranger District. This alternative involved reducing the development LUDs in the ranger district and changing them to Semi-Remote Recreation. Between the Draft EIS and the Final EIS the development LUDs of Alternative 1 in this ranger district were converted to Semi-Remote Recreation. Therefore, it was determined that the City and Borough of Yakutat recommendation was bracketed by the revised Alternative 1 and Alternative 2 in the Final EIS and, therefore, it was not necessary to add an additional alternative for this specific area.

### **Alternatives Considered in Detail**

The following section defines terminology and presents information regarding several aspects of the alternatives. The alternatives considered in detail are presented afterward.

### **The Allowable Sale Quantity**

The amount of timber that could be sold under a Forest Plan is expressed as an Allowable Sale Quantity (ASQ). The ASQ is the maximum amount of timber that may be sold from the area of suitable land contained under the Forest Plan within a given decade (although it is usually expressed in average annual terms). It is neither a targeted amount, nor is it a required amount. It is a ceiling. The amount of timber offered for sale in any year can exceed the annual average as long as the total decade's ASQ is not exceeded, and can also be anywhere below the annual average; the amount offered for sale over a decade can be below the decadal ASQ. Many factors can result in timber sale offerings that are below the average annual ASQ, including lack of program funding, new resource issues that need to be addressed, changes in timber markets, sales delayed by appeals or lawsuits, or other factors that reduce the actual volume.

In some situations, timber can be harvested from unsuitable lands and can contribute to satisfying timber demand, but cannot contribute to the ASQ. An example is the timber produced from thinning of second-growth stands for wildlife habitat enhancement, within LUDs identified as not suitable for timber production.

### **Non-interchangeable Components**

Economics is an important consideration in determining what land can be harvested; however, economic conditions can fluctuate greatly from year to year, shifting specific forest stands from being economic to uneconomic to harvest. As a result, the Tongass National Forest uses the concept of non-interchangeable components

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(NIC) to consider economics. NICs allow the separation of ASQ into discrete, individually accountable categories. All seven alternatives have an ASQ for the first decade made up of two NICs:

**NIC I.** Normal operable volume scheduled from suitable lands that are available for harvest using standard logging systems. This is the most economically operable ground and is typically where the Tongass National Forest has been offering most sales.

**NIC II.** Non-standard (difficult and isolated) operable volume scheduled from suitable lands that are available for harvest using logging systems not in common use. These lands are currently considered economically and technologically marginal. In the past, this land has rarely been economical to harvest.

Chargeable timber volume from one NIC cannot be substituted for the achievement of the volume limit of another NIC, nor can the limits on the sale of chargeable timber volume associated with each NIC be exceeded.

### Standards and Guidelines and Management Prescriptions

The Forest-wide standards and guidelines in Chapter 4, the management prescriptions in Chapter 3, and other chapters of the current Tongass Forest Plan (USDA Forest Service, 1997b) apply to Alternative 5, the No-Action Alternative in this EIS, and are not repeated here. An updated and edited version of the 1997 Forest Plan (as amended) was developed for Alternative 6, the Proposed Action, and for Alternatives 1, 2, and 3. A Proposed Forest Plan was released in January 2007 with the Draft EIS at the beginning of the comment period. This Proposed Forest Plan is modified and updated further for this Final EIS, and is referred to as the Final Proposed Forest Plan (see below). Alternatives 4 and 7 also follow the updated Forest Plan, with the exceptions noted in their alternative descriptions (see below).

Applicable LUD management prescriptions and Forest-wide standards and guidelines are discussed throughout the environmental consequences sections of Chapter 3 because they serve as the basic mitigation measures for individual projects under the Forest Plan. The Forest-wide standards and guidelines, and the LUD-specific standards and guidelines that constitute the management prescriptions, are the full set of mitigation measures for each alternative.

#### **Goals Common to All Alternatives**

**Air.** Maintain the current air resource condition to protect the Forest's ecosystems from on- and off-Forest air emission sources.

**Biodiversity.** Maintain healthy forest ecosystems; a mix of habitats at different spatial scales (site, watershed, island, province, and forest) capable of supporting the full range of naturally occurring flora, fauna, and ecological processes native to Southeast Alaska.

**Ecosystem Services and Non-Use Values.** Maintain the broad range and high level of ecosystem services (e.g., watershed, water quality, air quality, biodiversity), and non-use values (e.g., existence, option, and bequest values associated with natural areas) that are provided by the Tongass National Forest.

**Fish.** Maintain or restore the natural range and frequency of aquatic habitat conditions on the Tongass National Forest to sustain the diversity and production of fish and other freshwater organisms.

**Heritage Resources.** Identify, evaluate, preserve, and protect heritage resources.

**Local and Regional Economies.** Provide a diversity of opportunities for resource uses that contribute to the local and regional economies of Southeast Alaska.

**Rare Natural Areas.** Protect a variety of areas with natural, scenic, or geologic features distinct to the region, including areas set aside specifically for future research needs.

**Research.** Continue to seek out and promote research opportunities that are consistent with identified information needs.

**Soil and Water.** Maintain soil productivity Forest-wide, and minimize soil erosion resulting from land-disturbing activities. Minimize sediment transported to streams from land-disturbing activities. Maintain and restore the biological, physical, and chemical integrity of Tongass National Forest waters.

**Subsistence.** Provide for the continuation of subsistence uses and resources by all rural Alaskan residents.

**Wetlands.** Minimize the destruction, loss or degradation of wetlands, and preserve and enhance the associated wetland functions and values.

**Wilderness.** Manage designated Wilderness to maintain an enduring wilderness resource while providing for public access and uses consistent with the Wilderness Act of 1964 and the Alaska National Interest Lands Conservation Act of 1980 (ANILCA).

### ***Descriptions of the Alternatives***

Each alternative description includes the following components: 1) a framework; 2) a general description of the desired condition; 3) a table with the acreages allocated to each LUD; 4) a map (included in the *Map Packet* accompanying the EIS hard copy or in the *Map Section* of the CD version) showing the composition of LUDs across the Forest; 5) a map showing the distribution of development, natural setting, and wilderness LUDs; 6) a description of proposed changes to the current Forest-wide standards and guidelines and management prescriptions; and 7) a quantification of outputs and measures associated with each alternative.

The management prescriptions (i.e., LUD-specific standards and guidelines) for each LUD are included in the 1997 Forest Plan, as amended, or in the Final Proposed Forest Plan (see next section), as are the Forest-wide standards and guidelines that apply to each alternative. Details on the modeling of each alternative are included in Appendix B to this EIS (included Volume II).

In the LUD tables for each alternative, the changes from existing acreages represent the differences between the decisions made in the 1997 Tongass Forest Plan Revision ROD, as amended, and the Forest Plan Amendment EIS alternatives.

The goals common to all alternatives are provided below. In addition, the Tongass Timber Reform Act (Section 101) direction for the Tongass to “seek to provide a supply of timber which 1) meets the annual market demand for timber from such forest and 2) meets the market demand from such forest for each planning cycle” will be followed by each alternative “to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources,” as determined by that alternative, and subject to appropriations and applicable law.

### ***Summary of Final Proposed Forest Plan***

The 1997 Forest Plan (USDA Forest Service 1997b), as amended, is the plan associated with Alternative 5, the No-Action Alternative. A number of changes to the Forest Plan text are being proposed under the other alternatives, based on the

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Forest Plan 5 Year Review and Forest Service staff recommendations. Most changes were incorporated into a Proposed Forest Plan (Land and Resource Management Plan), which accompanied the Draft EIS. These changes were modified and updated for the Final EIS and the major changes being proposed are summarized in this section. The individual alternative descriptions on the following pages only identify items that are not consistent with the Final Proposed Forest Plan, which is defined by the Proposed Forest Plan that accompanied the Draft EIS, as modified in this section. A summary of the main changes that are incorporated into the Final Proposed Forest Plan are provided below.

### Management Prescriptions

- Edits and clarifications were made regarding karst management programs, sacred site protection, minerals and geology, off-highway vehicle use, scenery management, and other areas for most LUD prescriptions
- Substantial edits and clarifications were made to the Wilderness and Wilderness National Monument LUD prescriptions

### Forest-wide Standards and Guidelines

- Clarifications were made to the standards and guidelines regarding steep slopes and soil stability in the *Soils* and *Water* section.
- Clarifications were made to the standards and guidelines on Class III and IV streams and edits were made to the other standards and guidelines in the Fish section
- The detailed stream process group-specific riparian standards and guidelines are presented in an appendix in the Final Proposed Forest Plan, instead of in the main body of the standards and guidelines, which is the way they were presented in the Proposed Forest Plan that accompanied the Draft EIS.
- A new section was added to Chapter 4 on Invasive Species.
- A new section was added to Chapter 4 on Plants.
- The Threatened, Endangered, and Sensitive Species standards and guidelines are incorporated into subsections under Fish, Wildlife, and Plants (as appropriate) in the Final Proposed Plan, instead of in a separate section as in the Proposed Plan that accompanied the Draft EIS.
- The goshawk foraging habitat and the marten habitat standards and guidelines in the *Wildlife* section were deleted and replaced with a Forest-wide legacy standard and guideline in the Proposed Forest Plan that accompanied the Draft EIS. In addition, the legacy standard and guideline for the Final Proposed Forest Plan is revised further. The revised standard and guideline requires legacy forest structure to be left only in harvest units greater than 20 acres and only in higher risk VCUs, as previously defined (49 VCUs).
- The goshawk nesting habitat standard and guideline in the *Wildlife* section was revised in the Proposed Forest Plan that accompanied the Draft EIS. In addition, the goshawk nesting habitat standard and guideline for the Final Proposed Forest Plan is revised further. The revised standard and guideline permits nesting habitat protection measures to be removed if, after 2 consecutive years of monitoring, evidence of confirmed or probable nesting is no longer observed.
- The requirement to conduct inventories to determine the presence of nesting goshawks for proposed projects that affect goshawk habitat is included in the

Final Proposed Forest Plan (this was inadvertently removed from the Proposed Forest Plan that accompanied the Draft EIS).

- New standards and guidelines on sacred site protection were added in the *Heritage Resources and Sacred Sites* section.
- Extensive edits were made to the Karst and Cave Resources standards and guidelines and the Karst and Cave Resources appendix.
- Substantial edits were made to the Minerals and Geology standards and guidelines.
- Substantial edits were made to the Recreation and Tourism standards and guidelines. The detailed Recreation Opportunity Spectrum-specific standards and guidelines are presented in an appendix in the Final Proposed Forest Plan, instead of in the main body of the standards and guidelines, which is the way they were presented in the Proposed Forest Plan that accompanied the Draft EIS.
- The Scenery standards and guidelines were converted from the Visual Management System to the Scenery Management System.
- Edits were made to off-highway vehicle standards and guidelines in the *Lands* section.
- Edits were made to the road storage and decommissioning standards and guidelines in the *Transportation and Utilities* section.

In addition, there are a number of changes to other Forest Plan sections. These include changes to the Goals and Objectives (Chapter 2 of the Plan) and Monitoring and Evaluation (Chapter 6 of the Plan) chapters and to a number of the Forest Plan appendices, including Appendix B (Information Needs), Appendix F (Visual Priority Routes and Use Areas), Appendix I (Karst and Caves), Appendix K (Old-Growth Habitat Reserve Criteria), and Appendix L (Resource Schedules).

Finally, the 1982 Planning Regulations implementing NFMA include identification of Wildlife Management Indicator Species (MIS) in Forest Plans. The primary intent of MIS was to monitor populations of selected species to see if longer term trends were indicating they could become threatened or endangered across the national forest. The 1997 Forest Plan identified 13 wildlife and 4 fish MIS species with associated monitoring guidelines. The Tongass National Forest has analyzed MIS monitoring information assembled since 1997. Chapter 3 includes information for each of the species. It has been determined this information is lacking in sufficient detail to help guide management of the selected species on the Forest. The Tongass hosted an interagency review of the Forest Plan Conservation Strategy in April of 2006, which included updated information related to most of the MIS species. Much discussion at the review and in other related venues locally and nationally indicate monitoring should be more focused on wildlife habitats instead of species population trends by themselves. Interagency discussions related to wildlife monitoring and the MIS themselves are ongoing. As a result, the Monitoring and Evaluation chapter in the Final Proposed Plan is revised to be more focused, relative to the version in the Proposed Forest Plan that accompanied the Draft EIS. It is anticipated that the current list of MIS may be revised in the future, but a change in MIS is not part of the Final Proposed Plan.

## 2 Alternatives

### Proposed LUD Changes Common to Most Alternatives

The LUD allocations for each alternative are described in the following alternative-specific descriptions. The alternatives do not vary in terms of the acreage allocated to congressionally designated areas (i.e., Wilderness, National Monument, and LUD II), nor do they vary in terms of allocations to Research Natural Areas, Enacted Municipal Watersheds, or Wild, Scenic, or Recreational River LUDs. However, they do vary with respect to the other non-development LUDs and all of the development LUDs. The LUDs for each alternative are displayed on alternative LUD maps that accompany this EIS.

Proposed changes to the Special Interest Area and Experimental Forest LUDs are common under all alternatives except Alternative 5, which would follow the 1997 Forest Plan (as amended) for these two LUDs. The proposed changes to Special Interest Area and Experimental Forest LUDs are quantified in the following alternative description sections and shown on the alternative LUD maps, and are described in detail in the *Other Special Land Use Designation* section of Chapter 3.

Proposed changes to the Old-Growth Habitat LUD are common under Alternatives 1, 2, 3, and 6, and are as a result of an interagency process that took place in parallel with this EIS, and was initiated in 2006 and completed in 2007. Under this process, the Tongass worked with the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service to conduct a comprehensive review and mapping effort for all small old-growth reserves (OGR). The objective of the interagency team review was to develop a consensus biological recommendation on small OGR composition and locations that was consistent with the Forest Plan. This process included the development of a biological recommendation, the refinement of that proposal with Forest Service Ranger District staff, and further refinement by the Forest Supervisor. The refinement process was conducted in order to consider multiple-use objectives in addition to pure biological ones. The final proposal is included in Alternatives 1, 2, 3, and 6 of the Final EIS. Alternative 5 retains the 1997 Plan (as amended) reserve network and the reserves proposed under Alternatives 4 and 7 are not affected by this proposal. Further information on the refinement of small OGRs is included in Appendix D.

**Alternative 1**

**Framework**

Under this alternative, forest management would provide a mix of National Forest uses and activities, but would emphasize maintaining inventoried roadless areas, associated fish and wildlife values, and unroaded recreation, tourism, and subsistence opportunities, relative to the current Forest Plan. Timber would be managed within the roaded land base and all inventoried roadless areas would remain in a natural condition. In addition, a number of higher value roaded areas, including all of Kuiu, Baranof, and Kruzof Islands, many portions of Chichagof Island, all mainland areas, and other areas, would be excluded from commercial timber management. A total of 840,000 acres of the Tongass would be in development LUDs and 15.9 million acres would be in non-development LUDs. The majority of the lands changed to non-development LUDs from development LUDs (in the current Plan) would be designated Semi-Remote Recreation. Specific LUD changes under this alternative would include the addition and modification of a number of Geologic Special Interest Areas, recommendations to change the Young Bay Experimental Forest to Semi-Remote Recreation and the Cowee-Davies Creek watersheds from Scenic Viewshed to Experimental Forest, and converting a large area of Remote Recreation LUD north of Juneau to Semi-Remote Recreation. It also would include extensive refinements to the boundaries of the small Old-Growth Reserves, based on a recently completed interagency evaluation.

This alternative would approximately correspond with Scenario 1 (limited lumber production) of the Brackley et al. (2006) timber demand study. It is similar to Alternative 8 of the 2003 SEIS in terms of the areas allocated to non-development LUDs.

**Desired Conditions**

The vast majority of the currently undisturbed areas of the Forest remain in a natural state and all existing inventoried roadless areas remain roadless. Old-growth conditions prevail on forest lands within these roadless areas. A small, but predictable and sustainable supply of forest products contributes to a very limited Southeast Alaska timber industry, probably based primarily in Ketchikan and Prince of Wales Island. A mixture of old growth, recently harvested areas, and various ages of young growth occurs within roaded areas. Recreation, tourism, and subsistence opportunities emphasize natural setting types, although roaded opportunities expand slightly from current conditions due to construction of additional roads primarily in already roaded areas.

**Land Use Designations**

If Alternative 1 is selected, the LUD allocation acres shown in Table 2-3 would result. Figure 2-1 shows the distribution of LUDs across the Tongass under Alternative 1 according to three LUD groups (see Table 2-3 for definitions of the LUD groups). A complete LUD map is provided as the Alternative 1 map in the *Map Section* of the CD version of this EIS or in the *Map Packet* accompanying the EIS hard copy.

**Management Prescriptions and Standards and Guidelines**

Under Alternative 1, the management prescriptions and standards and guidelines identified in the Final Proposed Land and Resource Management Plan would be adopted. These are generally the same as the management prescriptions and standards and guidelines in the 1997 Forest Plan, as amended; however, a number of changes and refinements are proposed. A summary of the main changes to the 1997 Forest Plan, as amended, is provided above in the section titled "Final Proposed Forest Plan."

**Selected Outputs**

Table 2-4 displays selected outputs and other measures associated with this alternative.

## 2 Alternatives

**Table 2-3  
Land Use Designations for Alternative 1<sup>1</sup>**

| Land Use Designation                       | Acres Allocated   | Net Change from Current Forest Plan Acres <sup>2</sup> |
|--|-------------------|--|
| <b>Wilderness LUD Group</b>                |                   |  |
| Wilderness                                 | 2,637,292         | 0  |
| National Monument <sup>3</sup>             | 3,278,734         | 0  |
| <b>Total for Wilderness LUD Group</b>      | <b>5,916,026</b>  | <b>0</b>   |
| <b>Natural Setting LUD Group</b>           |                   |  |
| LUD II                                     | 721,002           | 0  |
| Research Natural Area                      | 26,093            | 0  |
| Old Growth                                 | 1,221,174         | 38,749   |
| Special Interest Area                      | 221,174           | 46,712   |
| Enacted Municipal Watershed                | 45,226            | 0  |
| Wild, Scenic, and Recreational River       | 117,319           | 0  |
| Remote Recreation                          | 2,369,831         | 238,776  |
| Semi-Remote Recreation                     | 5,296,773         | 2,442,548  |
| <b>Total for Natural Setting LUD Group</b> | <b>10,018,592</b> | <b>2,766,786</b>                                       |
| <b>Development LUD Group</b>               |                   |  |
| Experimental Forest                        | 31,405            | 14,310   |
| Scenic Viewshed                            | 59,296            | (417,923)  |
| Modified Landscape                         | 188,357           | (413,005)  |
| Timber Production                          | 560,129           | (1,950,169)  |
| <b>Total for Development LUD Group</b>     | <b>839,187</b>    | <b>(2,766,786)</b>                                     |
| <b>Total National Forest System Lands</b>  | <b>16,773,804</b> | <b>0</b>   |

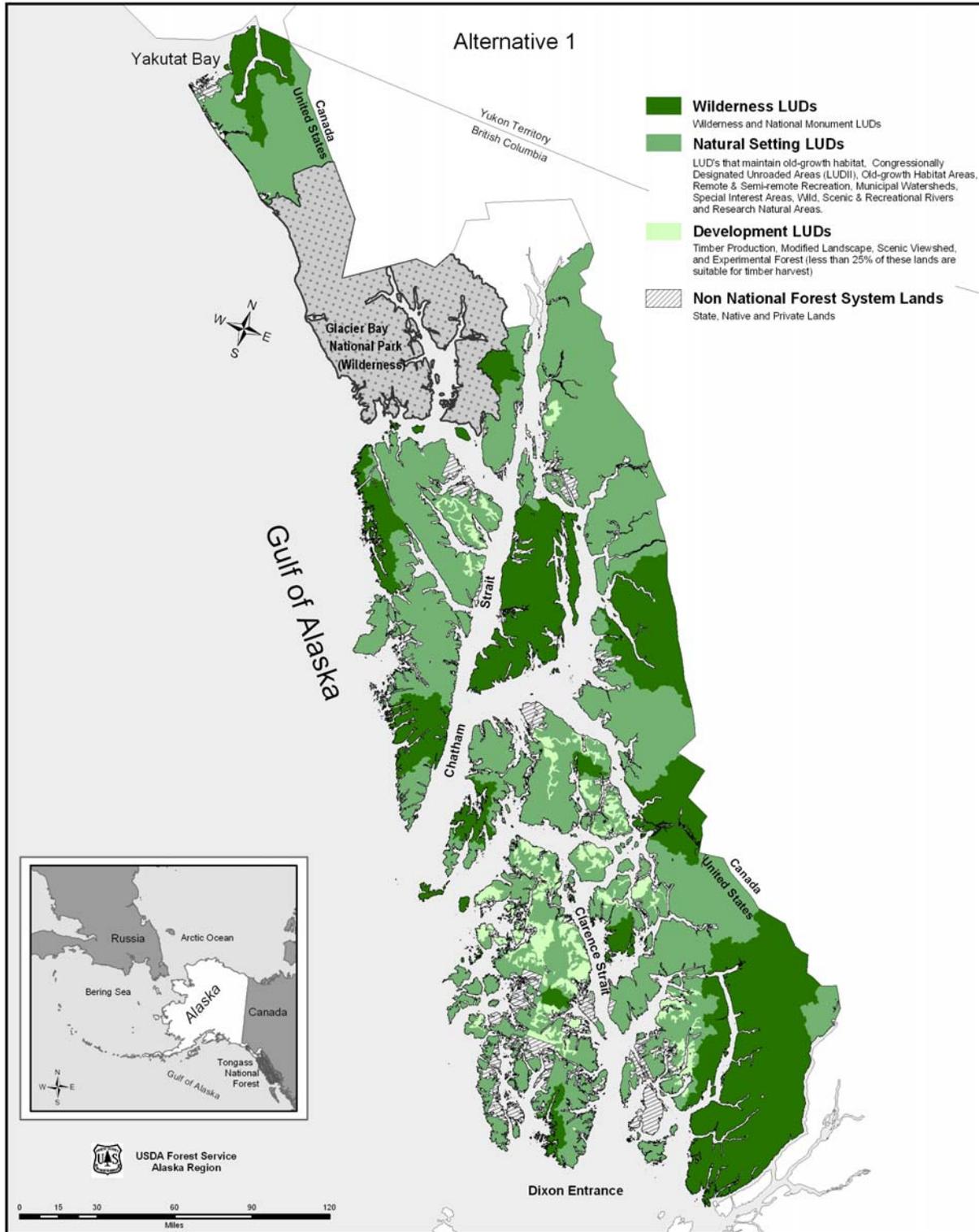
<sup>1</sup> When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and LUD II acres are always shown. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for the Transportation and Utility Systems LUD because it is a series of corridors with undefined width and imprecise locations. Totals may not exactly equal the sum of individual entries due to rounding.

<sup>2</sup> These changes from current Forest Plan acres are the differences from the decision made in the 1997 Tongass Forest Plan Revision ROD, as amended, which is represented by Alternative 5.

<sup>3</sup> The majority of the National Monument acres are wilderness; only 166,942 acres are non-wilderness.

<sup>4</sup> Small old-growth reserves and Special Interest Area LUDs increased relative to Alternative 5; however, they overlap extensively, especially on Heceta, Kosciusko, and northeast Chichagof Islands, and the acreages where they overlap were counted with Special Interest Areas.

**Figure 2-1**  
**Wilderness, Natural Setting, and Development LUDs on the Tongass National Forest**  
**under Alternative 1**



## 2 Alternatives

**Table 2-4  
Selected Outputs and Measures Associated with Alternative 1<sup>1</sup>**

| Resource/Category  | Output/Measure |
|--|----------------|
| Percent in Wilderness LUD Group  | 35%            |
| Percent in Natural Setting LUD Group   | 60%            |
| Percent in Development LUD Group   | 5%             |
| Amount of Development LUDs in Inventoried Roadless Areas (millions of acres) <sup>2</sup>                      | 0.0            |
| Percent of Current Productive Old Growth Protected in Reserves (Wilderness/Nat. Mon. and Natural Setting LUDs) | 93%            |
| Productive Old Growth after 100+ Years (millions of acres)   | 4.9            |
| Estimated Forest Land Suitable for Timber Production (acres) <sup>3</sup>                                      | 312,000        |
| Scheduled Suitable Forest Land (acres) <sup>3</sup>  | 144,000        |
| Allowable Sale Quantity or ASQ (millions of board feet) <sup>4</sup>   |                |
| 1st Decade ASQ   | 49             |
| 2nd Decade ASQ   | 49             |
| Maximum New Road Construction after 100+ Years (miles)   | 774            |
| Maximum Average Annual Timber Harvest during 1st Decade, based on the ASQ (acres)                              | 1,774          |
| Potential Short-term Effects on Timber Industry <sup>5</sup>   |                |
| Effect on Timber Volume Under Contract   | High           |
| Effect on NEPA-cleared Volume  | Low            |
| Effect on Timber Volume in Preparation   | Low            |
| Percent of Identified Mineral Tracts and Undiscovered Mineral Areas in Open LUDs with Higher Development Costs |                |
| Percent of Identified Mineral Tracts   | 36%            |
| Percent of Undiscovered Mineral Areas  | 57%            |
| Recreation Opportunity Spectrum Classes after 150 Years (millions of acres)                                    |                |
| Primitive and Semi-Primitive Non-Motorized   | 13.2           |
| Semi-Primitive Motorized   | 1.4            |
| Roaded Natural and Roaded Modified   | 2.1            |

<sup>1</sup> Totals may not add exactly due to rounding.

<sup>2</sup> No lands suitable for timber management and no lands within Timber Production, Modified Landscape, or Scenic Viewshed LUDs are included in inventoried roadless areas under Alternative 1. Approximately 27,000 acres of Experimental Forest are included.

<sup>3</sup> Estimated forest land suitable for timber production represents the mapped suitable forest land minus the estimated portion that is unsuitable, but not mapped as such. The scheduled suitable forest land is the portion of the estimated suitable forest land that is scheduled for harvest by ASQ modeling.

<sup>4</sup> ASQ volumes expressed as annual averages and include sawlog plus utility.

<sup>5</sup> This evaluation provides an indication of potential effects; actual effects would depend on the volume that is under contract when the decision is implemented and whether potentially affected existing sales are cancelled or exempted as part of the decision.

**Alternative 2**

**Framework**

Under this alternative, forest management would provide a mix of National Forest uses and activities, but would give additional emphasis to roadless areas, associated fish and wildlife values, and unroaded recreation, tourism, and subsistence opportunities, relative to the current Forest Plan. Timber would be managed within the roaded land base as well as within roadless areas with lower wilderness attribute ratings (primarily those adjacent to developed areas). The vast majority of current roadless areas would remain in a natural condition. A total of 1.9 million acres of the Tongass would be in development LUDs and 14.8 million acres would be in non-development LUDs. The majority of the lands changed to non-development LUDs from development LUDs (in the current Plan) would be designated Semi-Remote Recreation. All areas identified as development LUDs in Alternative 1 would also be development LUDs in this alternative, in addition to other areas. Specific LUD changes under this alternative would include the addition and modification of a number of Geologic Special Interest Areas, recommendations to change the Young Bay Experimental Forest to Semi-Remote Recreation and the Cowee-Davies Creek watersheds from Scenic Viewshed to Experimental Forest, and converting a large area of Remote Recreation LUD north of Juneau to Semi-Remote Recreation. It also would include extensive refinements to the boundaries of the small Old-Growth Reserves, based on a recently completed interagency evaluation.

This alternative would approximately correspond with Scenario 2 (expanded lumber production) of the Brackley et al. (2006) timber demand study.

**Desired Conditions**

The vast majority of the currently undisturbed areas of the Forest remain in a natural state and most existing roadless areas remain roadless. However, some roadless areas adjacent to existing roaded areas are developed. Old growth conditions prevail on forest lands within roadless areas. A moderate, predictable, and sustainable supply of forest products contributes to a limited Southeast Alaska timber industry, probably based in Ketchikan, Prince of Wales Island, and other communities. A mixture of old growth, recently harvested areas, and various ages of young growth occurs within roaded areas. Recreation, tourism, and subsistence opportunities emphasize natural setting types, although roaded opportunities expand from current conditions.

**Land Use Designations**

If Alternative 2 is selected, the LUD allocation acres shown in Table 2-5 would result. Figure 2-2 shows the distribution of LUDs across the Tongass under Alternative 2 according to three LUD groups (see Table 2-5 for definitions of the LUD groups). A complete LUD map is provided as the Alternative 2 map in the *Map Section* of the CD version of this EIS or in the *Map Packet* accompanying the EIS hard copy.

**Management Prescriptions and Standards and Guidelines**

Under Alternative 2, the management prescriptions and standards and guidelines identified in the Final Proposed Forest Plan would be adopted. These are generally the same as the management prescriptions and standards and guidelines in the current Forest Plan; however, a number of changes and refinements are proposed. A summary of the main changes to the current Forest Plan is provided above in the section titled “Final Proposed Forest Plan.”

**Selected Outputs**

Table 2-6 displays selected outputs and other measures associated with this alternative.

## 2 Alternatives

**Table 2-5  
Land Use Designations for Alternative 2<sup>1</sup>**

| Land Use Designation                       | Acres Allocated   | Net Change from Current Forest Plan Acres <sup>2</sup> |
|--|-------------------|--|
| <b>Wilderness LUD Group</b>                |                   |  |
| Wilderness                                 | 2,637,292         | 0  |
| National Monument <sup>3</sup>             | 3,278,734         | 0  |
| <b>Total for Wilderness LUD Group</b>      | <b>5,916,026</b>  | <b>0</b>   |
| <b>Natural Setting LUD Group</b>           |                   |  |
| LUD II                                     | 721,002           | 0  |
| Research Natural Area                      | 26,093            | 0  |
| Old Growth                                 | 1,221,173         | 38,749   |
| Special Interest Area                      | 221,176           | 46,713   |
| Enacted Municipal Watershed                | 45,226            | 0  |
| Wild, Scenic, and Recreational River       | 117,319           | 0  |
| Remote Recreation                          | 2,344,149         | 213,095  |
| Semi-Remote Recreation                     | 4,232,082         | 1,377,857  |
| <b>Total for Natural Setting LUD Group</b> | <b>8,928,220</b>  | <b>1,676,414</b>                                       |
| <b>Development LUD Group</b>               |                   |  |
| Experimental Forest                        | 31,405            | 14,310   |
| Scenic Viewshed                            | 213,193           | (264,026)  |
| Modified Landscape                         | 331,955           | (269,407)  |
| Timber Production                          | 1,353,006         | (1,157,291)  |
| <b>Total for Development LUD Group</b>     | <b>1,929,559</b>  | <b>(1,676,414)</b>                                     |
| <b>Total National Forest System Lands</b>  | <b>16,773,805</b> | <b>0</b>   |

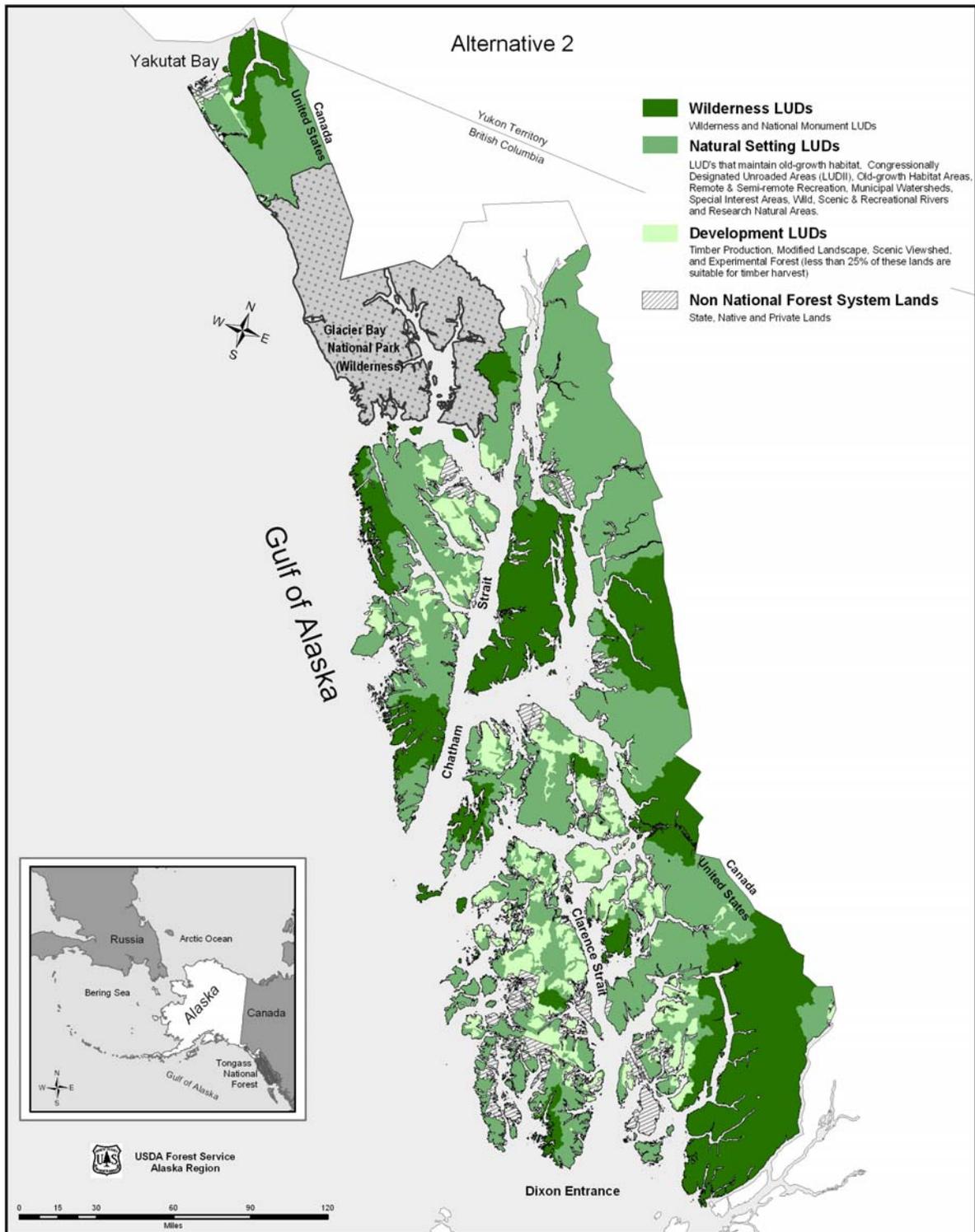
<sup>1</sup> When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and LUD II acres are always shown. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for the Transportation and Utility Systems LUD because it is a series of corridors with undefined width and imprecise locations. Totals may not exactly equal the sum of individual entries due to rounding.

<sup>2</sup> These changes from current Forest Plan acres are the differences from the decision made in the 1997 Tongass Forest Plan Revision ROD, as amended, which is represented by Alternative 5.

<sup>3</sup> The majority of the National Monument acres are wilderness; only 166,942 acres are non-wilderness.

<sup>4</sup> Small old-growth reserves and Special Interest Area LUDs increased relative to Alternative 5; however, they overlap extensively, especially on Heceta, Kosciusko, and northeast Chichagof Islands, and the acreages where they overlap were counted with Special Interest Areas.

**Figure 2-2**  
**Wilderness, Natural Setting, and Development LUDs on the Tongass National Forest**  
**under Alternative 2**



## 2 Alternatives

**Table 2-6  
Selected Outputs and Measures Associated with Alternative 2<sup>1</sup>**

| Resource/Category  | Output/Measure |
|--|----------------|
| Percent in Wilderness LUD Group  | 35%            |
| Percent in Natural Setting LUD Group   | 53%            |
| Percent in Development LUD Group   | 12%            |
| Amount of Development LUDs in Inventoried Roadless Areas (millions of acres)                                   | 0.8            |
| Percent of Current Productive Old Growth Protected in Reserves (Wilderness/Nat. Mon. and Natural Setting LUDs) | 84%            |
| Productive Old Growth after 100+ Years (millions of acres)   | 4.7            |
| Estimated Forest Land Suitable for Timber Production (acres) <sup>2</sup>                                      | 545,000        |
| Scheduled Suitable Forest Land (acres) <sup>2</sup>  | 403,000        |
| Allowable Sale Quantity or ASQ (millions of board feet) <sup>3</sup>   |                |
| 1st Decade ASQ   | 151            |
| 2nd Decade ASQ   | 151            |
| Maximum New Road Construction after 100+ Years (miles)   | 2,079          |
| Maximum Average Annual Timber Harvest during 1st Decade, based on the ASQ (acres)                              | 5,387          |
| Potential Short-term Effects on Timber Industry <sup>4</sup>   |                |
| Effect on Timber Volume Under Contract   | None           |
| Effect on NEPA-cleared Volume  | Low            |
| Effect on Timber Volume in Preparation   | Very Low       |
| Percent of Identified Mineral Tracts and Undiscovered Mineral Areas in Open LUDs with Higher Development Costs |                |
| Percent of Identified Mineral Tracts   | 29%            |
| Percent of Undiscovered Mineral Areas  | 51%            |
| Recreation Opportunity Spectrum Classes after 150 Years (millions of acres)                                    |                |
| Primitive and Semi-Primitive Non-Motorized   | 12.8           |
| Semi-primitive Motorized   | 1.3            |
| Roaded Natural and Roaded Modified   | 2.6            |

<sup>1</sup> Totals may not add exactly due to rounding.

<sup>2</sup> Estimated forest land suitable for timber production represents the mapped suitable forest land minus the estimated portion that is unsuitable, but not mapped as such. The scheduled suitable forest land is the portion of the estimated suitable forest land that is scheduled for harvest by ASQ modeling.

<sup>3</sup> ASQ volumes expressed as annual averages and include sawlog plus utility.

<sup>4</sup> This evaluation provides an indication of potential effects; actual effects would depend on the volume that is under contract when the decision is implemented and whether potentially affected existing sales are cancelled or exempted as part of the decision.

**Alternative 3**

**Framework**

Under Alternative 3, forest management would provide a mix of National Forest uses and activities, but would give some additional emphasis to roadless areas, associated fish and wildlife values, and unroaded recreation, tourism, and subsistence opportunities, relative to the current Forest Plan. Timber would be managed within the roaded land base as well as within additional roadless areas; but these additional areas would not include the high value roadless areas identified in the 1999 Record of Decision (USDA Forest Service 1999) as the 18 Areas of Special Interest or the 23 areas proposed for wilderness in H.R. 987. The vast majority of current roadless areas would remain in a natural condition. A total of 2.8 million acres of the Tongass would be in development LUDs and 14.0 million acres would be in non-development LUDs. The majority of the lands changed to non-development LUDs from development LUDs (in the current Plan) would be designated Semi-Remote Recreation. All areas identified as development LUDs in Alternative 2 would also be development LUDs in this alternative, in addition to other areas. Specific LUD changes under this alternative would include the addition and modification of a number of Geologic Special Interest Areas, recommendations to change the Young Bay Experimental Forest to Semi-Remote Recreation and the Cowee-Davies Creek watersheds from Scenic Viewshed to Experimental Forest, and converting a large area of Remote Recreation LUD north of Juneau to Semi-Remote Recreation. It also would include extensive refinements to the boundaries of the small Old-Growth Reserves, based on a recently completed interagency evaluation.

This alternative would approximately correspond with Scenario 3 (medium integrated industry) of the Brackley et al. (2006) timber demand study. It is similar to Alternative 5 of the 2003 SEIS in terms of the areas allocated to non-development LUDs.

**Desired Conditions**

The vast majority of the currently undisturbed areas of the Forest remain in a natural state and most existing roadless areas remain roadless. However, over half of the roadless areas to be developed under the current Forest Plan are developed. Old growth conditions prevail on forest lands within the roadless areas. A predictable and sustainable supply of forest products contributes to a medium integrated timber industry in Southeast Alaska, probably based in Ketchikan, Prince of Wales Island, Wrangell, and Hoonah. A mixture of old growth, recently harvested areas, and various ages of young growth occurs within roaded areas. Recreation, tourism, and subsistence opportunities occur in natural setting types, but roaded opportunities are considerably expanded from current conditions, although not as much as under the current Plan.

**Land Use Designations**

If Alternative 3 is selected, the LUD allocation acres shown in Table 2-7 would result. Figure 2-3 shows the distribution of LUDs across the Tongass under Alternative 3 according to three LUD groups (see Table 2-7 for definitions of the LUD groups). A complete LUD map is provided as the Alternative 3 map in the *Map Section* of the CD version of this EIS or in the *Map Packet* accompanying the EIS hard copy.

**Management Prescriptions and Standards and Guidelines**

Under Alternative 3, the management prescriptions and standards and guidelines identified in the Final Proposed Forest Plan would be adopted. These are generally the same as the management prescriptions and standards and guidelines in the current Forest Plan; however, a number of changes and refinements are proposed. A summary of the main changes to the current Forest Plan is provided above in the section titled "Final Proposed Forest Plan."

**Selected Outputs**

Table 2-8 displays selected outputs and other measures associated with this alternative.

## 2 Alternatives

**Table 2-7  
Land Use Designations for Alternative 3<sup>1</sup>**

| Land Use Designation                       | Acres Allocated   | Net Change from Current Forest Plan Acres <sup>2</sup> |
|--|-------------------|--|
| <b>Wilderness LUD Group</b>                |                   |  |
| Wilderness                                 | 2,637,292         | 0  |
| National Monument <sup>3</sup>             | 3,278,734         | 0  |
| <b>Total for Wilderness LUD Group</b>      | <b>5,916,026</b>  | <b>0</b>   |
| <b>Natural Setting LUD Group</b>           |                   |  |
| LUD II                                     | 721,002           | 0  |
| Research Natural Area                      | 26,093            | 0  |
| Old Growth                                 | 1,221,173         | 38,749   |
| Special Interest Area                      | 221,176           | 46,712   |
| Enacted Municipal Watershed                | 45,226            | 0  |
| Wild, Scenic, and Recreational River       | 117,319           | 0  |
| Remote Recreation                          | 2,182,091         | 51,036   |
| Semi-Remote Recreation                     | 3,519,753         | 665,527  |
| <b>Total for Natural Setting LUD Group</b> | <b>8,053,833</b>  | <b>802,025</b>   |
| <b>Development LUD Group</b>               |                   |  |
| Experimental Forest                        | 31,405            | 14,309   |
| Scenic Viewshed                            | 320,457           | (156,763)  |
| Modified Landscape                         | 478,541           | (122,820)  |
| Timber Production                          | 1,973,542         | (536,755)  |
| <b>Total for Development LUD Group</b>     | <b>2,803,945</b>  | <b>(802,025)</b>                                       |
| <b>Total National Forest System Lands</b>  | <b>16,773,803</b> | <b>0</b>   |

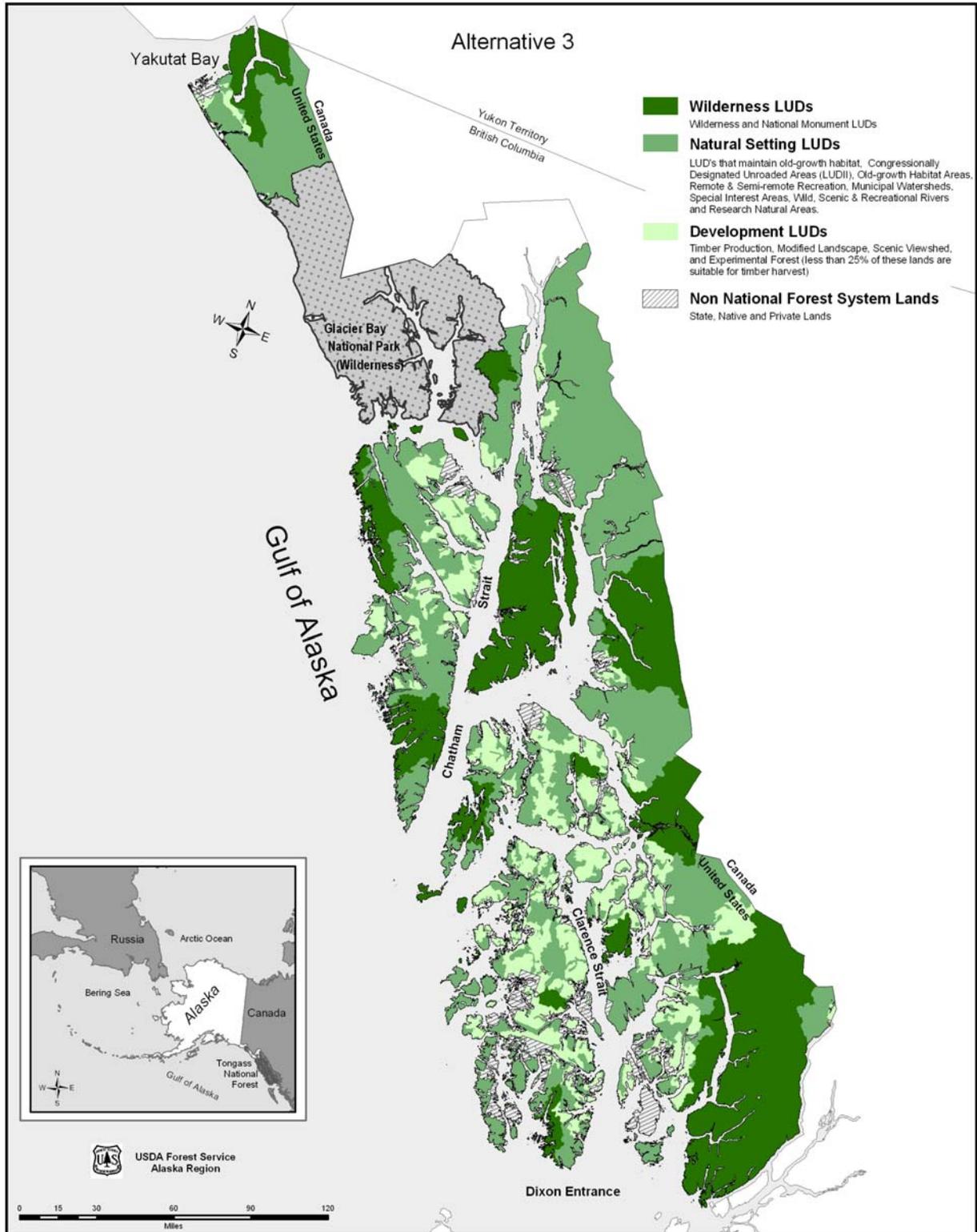
<sup>1</sup> When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and LUD II acres are always shown. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for the Transportation and Utility Systems LUD because it is a series of corridors with undefined width and imprecise locations. Totals may not exactly equal the sum of individual entries due to rounding.

<sup>2</sup> These changes from current Forest Plan acres are the differences from the decision made in the 1997 Tongass Forest Plan Revision ROD, as amended, which is represented by Alternative 5.

<sup>3</sup> The majority of the National Monument acres are wilderness; only 166,942 acres are non-wilderness.

<sup>4</sup> Small old-growth reserves and Special Interest Area LUDs increased relative to Alternative 5; however, they overlap extensively, especially on Heceta, Kosciusko, and northeast Chichagof Islands, and the acreages where they overlap were counted with Special Interest Areas.

**Figure 2-3**  
**Wilderness, Natural Setting, and Development LUDs on the Tongass National Forest**  
**under Alternative 3**



## 2 Alternatives

**Table 2-8  
Selected Outputs and Measures Associated with Alternative 3<sup>1</sup>**

| Resource/Category  | Output/Measure |
|--|----------------|
| Percent in Wilderness LUD Group  | 35%            |
| Percent in Natural Setting LUD Group   | 48%            |
| Percent in Development LUD Group   | 17%            |
| Amount of Development LUDs in Inventoried Roadless Areas (millions of acres)                                   | 1.7            |
| Percent of Current Productive Old Growth Protected in Reserves (Wilderness/Nat. Mon. and Natural Setting LUDs) | 78%            |
| Productive Old Growth after 100+ Years (millions of acres)   | 4.6            |
| Estimated Forest Land Suitable for Timber Production (acres) <sup>2</sup>                                      | 661,000        |
| Scheduled Suitable Forest Land (acres) <sup>2</sup>  | 526,000        |
| Allowable Sale Quantity or ASQ (millions of board feet) <sup>3</sup>   |                |
| 1st Decade ASQ   | 204            |
| 2nd Decade ASQ   | 205            |
| Maximum New Road Construction after 100+ Years (miles)   | 2,799          |
| Maximum Average Annual Timber Harvest during 1st Decade, based on the ASQ (acres)                              | 6,824          |
| Potential Short-term Effects on Timber Industry <sup>4</sup>   |                |
| Effect on Timber Volume Under Contract   | None           |
| Effect on NEPA-cleared Volume  | None           |
| Effect on Timber Volume in Preparation   | Very Low       |
| Percent of Identified Mineral Tracts and Undiscovered Mineral Areas in Open LUDs with Higher Development Costs |                |
| Percent of Identified Mineral Tracts   | 26%            |
| Percent of Undiscovered Mineral Areas  | 45%            |
| Recreation Opportunity Spectrum Classes after 150 Years (millions of acres)                                    |                |
| Primitive and Semi-Primitive Non-Motorized   | 12.4           |
| Semi-Primitive Motorized   | 1.3            |
| Roaded Natural and Roaded Modified   | 3.1            |

<sup>1</sup> Totals may not add exactly due to rounding.

<sup>2</sup> Estimated forest land suitable for timber production represents the mapped suitable forest land minus the estimated portion that is unsuitable, but not mapped as such. The scheduled suitable forest land is the portion of the estimated suitable forest land that is scheduled for harvest by ASQ modeling.

<sup>3</sup> ASQ volumes expressed as annual averages and include sawlog plus utility.

<sup>4</sup> This evaluation provides an indication of potential effects; actual effects would depend on the volume that is under contract when the decision is implemented and whether potentially affected existing sales are cancelled or exempted as part of the decision.

**Alternative 4**

**Framework**

Under Alternative 4, forest management would provide a mix of National Forest uses and activities, but would give additional emphasis to timber management and associated economic stability of Southeast Alaska communities, relative to the current Forest Plan. Timber would be managed within an area expanded beyond the current Forest Plan. The vast majority of current roadless areas would remain in a natural condition; however, the majority of roadless areas that contain substantial productive old growth (POG), outside of wilderness, would be developed. A total of 4.7 million acres of the Tongass would be in development LUDs and 12.0 million acres would be in non-development LUDs. Almost all areas identified as development LUDs in Alternative 5 would also be development LUDs in this alternative, in addition to other areas. Specific LUD changes under this alternative would include the addition and modification of a number of Geologic Special Interest Areas, recommendations to change the Young Bay Experimental Forest to Semi-remote Recreation and the Cowee-Davies Creek watersheds from Scenic Viewshed to Experimental Forest, and converting a large area of Remote Recreation LUD north of Juneau to Semi-Remote Recreation.

This alternative would approximately correspond with Scenario 4 (high integrated industry) of the Brackley et al. (2006) timber demand study. It is similar to Alternative 6 of the 1997 FEIS.

**Desired Conditions**

The vast majority of the currently undisturbed areas of the Forest remain in a natural state and most existing roadless areas remain roadless. However, all of the roadless areas to be developed under the current Forest Plan are developed along with some additional roadless areas. Old growth conditions prevail on forest lands within roadless areas. The Tongass produces a predictable and sustainable supply of forest products that contributes to a high integrated timber industry in Southeast Alaska, probably based in Ketchikan, Prince of Wales Island, Wrangell, Hoonah, and other communities; however, private and state lands also contribute to satisfying the demand for timber. A mixture of old growth, recently harvested areas, and various ages of young growth occurs within roaded areas. Recreation, tourism, and subsistence opportunities occur in natural setting types, but roaded opportunities are substantially expanded from current conditions.

**Land Use Designations**

If Alternative 4 is selected, the LUD allocation acres shown in Table 2-9 would result. Figure 2-4 shows the distribution of LUDs across the Tongass under Alternative 4 according to three LUD groups (see Table 2-9 for definitions of the LUD groups). A complete LUD map is provided as the Alternative 4 map in the *Map Section* of the CD version of this EIS or in the *Map Packet* accompanying the EIS hard copy.

**Management Prescriptions and Standards and Guidelines**

Under Alternative 4, the management prescriptions and standards and guidelines identified in the Final Proposed Forest Plan would be adopted, with the exceptions noted below. The Alternative 4 management prescriptions and standards and guidelines are generally the same as those in the current Forest Plan; however, a number of changes and refinements are proposed. The summary, presented above (Final Proposed Forest Plan section), of the main changes to the current Forest Plan, reflects the proposal under Alternative 4, with the following exceptions:

- The Old-Growth Habitat LUD (and the system of large, medium, and small old-growth reserves) is applied only within four biogeographic provinces (Northern Prince of Wales Island, Kupreanof/Mitkof Islands, Dall Island, Northeast Chichagof Island) plus several individual reserves outside of these provinces

## 2 Alternatives

- In Value Comparison Units (VCUs) not within the four biogeographic provinces identified above, retain a minimum of 33 percent of the productive forest land in an old-growth forest condition
- The goshawk foraging habitat standard and guideline, the high-value marten habitat standard and guideline, and the proposed Legacy standard and guideline would not be implemented

### Selected Outputs

Table 2-10 displays selected outputs and other measures associated with this alternative.

**Table 2-9  
Land Use Designations for Alternative 4<sup>1</sup>**

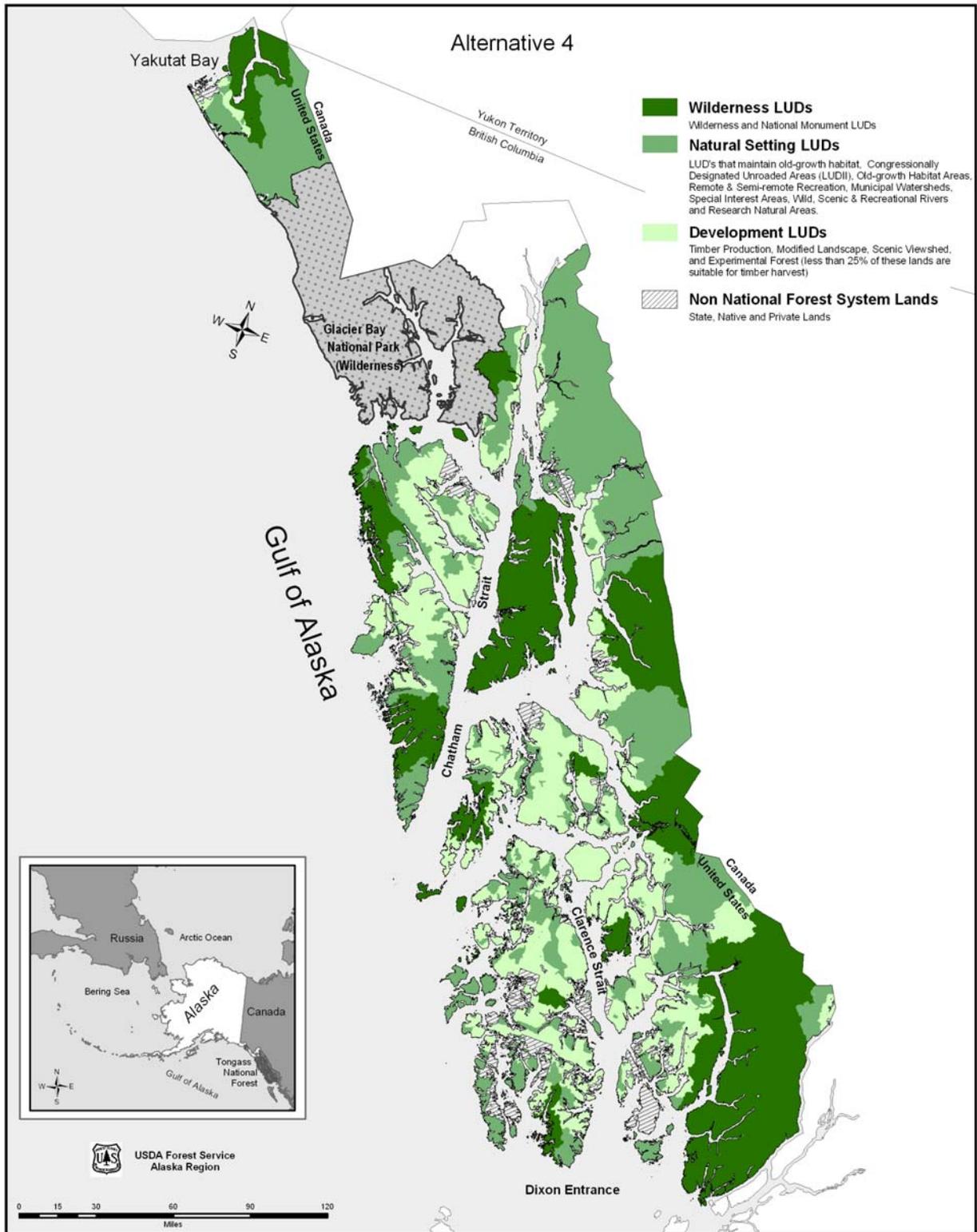
| Land Use Designation                       | Acres Allocated   | Net Change from Current Forest Plan Acres <sup>2</sup> |
|--|-------------------|--|
| <b>Wilderness LUD Group</b>                |                   |  |
| Wilderness                                 | 2,637,292         | 0  |
| National Monument <sup>3</sup>             | 3,278,734         | 0  |
| <b>Total for Wilderness LUD Group</b>      | <b>5,916,026</b>  | <b>0</b>   |
| <b>Natural Setting LUD Group</b>           |                   |  |
| LUD II                                     | 721,002           | 0  |
| Research Natural Area                      | 26,093            | 0  |
| Old Growth                                 | 393,360           | (789,064)  |
| Special Interest Area                      | 221,176           | 46,712   |
| Enacted Municipal Watershed                | 45,226            | 0  |
| Wild, Scenic, and Recreational River       | 117,319           | 0  |
| Remote Recreation                          | 2,089,331         | (41,724)   |
| Semi-Remote Recreation                     | 2,516,591         | (337,634)  |
| <b>Total for Natural Setting LUD Group</b> | <b>6,130,098</b>  | <b>(1,121,714)</b>                                     |
| <b>Development LUD Group</b>               |                   |  |
| Experimental Forest                        | 31,405            | 14,309   |
| Scenic Viewshed                            | 725,820           | 248,601  |
| Modified Landscape                         | 745,903           | 144,541  |
| Timber Production                          | 3,224,559         | 714,262  |
| <b>Total for Development LUD Group</b>     | <b>4,727,686</b>  | <b>1,121,714</b>                                       |
| <b>Total National Forest System Lands</b>  | <b>16,773,806</b> | <b>0</b>   |

<sup>1</sup> When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and LUD II acres are always shown. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for the Transportation and Utility System LUD because it is a series of corridors with undefined width and imprecise locations. Totals may not exactly equal the sum of individual entries due to rounding.

<sup>2</sup> These changes from current Forest Plan acres are the differences from the decision made in the 1997 Tongass Forest Plan Revision ROD, as amended, which is represented by Alternative 5.

<sup>3</sup> The majority of the National Monument acres are wilderness; only 166,942 acres are non-wilderness.

**Figure 2-4**  
**Wilderness, Natural Setting, and Development LUDs on the Tongass National Forest**  
**under Alternative 4**



## 2 Alternatives

**Table 2-10  
Selected Outputs and Measures Associated with Alternative 4<sup>1</sup>**

| Resource/Category  | Output/Measure |
|--|----------------|
| Percent in Wilderness LUD Group  | 35%            |
| Percent in Natural Setting LUD Group   | 37%            |
| Percent in Development LUD Group   | 28%            |
| Amount of Development LUDs in Inventoried Roadless Areas (millions of acres)                                   | 3.4            |
| Percent of Current Productive Old growth Protected in Reserves (Wilderness/Nat. Mon. and Natural Setting LUDs) | 60%            |
| Productive Old growth after 100+ Years (millions of acres)   | 4.3            |
| Estimated Forest Land Suitable for Timber Production (acres) <sup>2</sup>                                      | 999,000        |
| Scheduled Suitable Forest Land (acres) <sup>2</sup>  | 874,000        |
| Allowable Sale Quantity or ASQ (millions of board feet) <sup>3</sup>   |                |
| 1st Decade ASQ   | 312            |
| 2nd Decade ASQ   | 360            |
| Maximum New Road Construction after 100+ Years (miles)   | 4,890          |
| Maximum Average Annual Timber Harvest during 1st Decade, based on the ASQ (acres)                              | 11,647         |
| Potential Short-term Effects on Timber Industry <sup>4</sup>   |                |
| Effect on Timber Volume Under Contract   | None           |
| Effect on NEPA-cleared Volume  | None           |
| Effect on Timber Volume in Preparation   | None           |
| Percent of Identified Mineral Tracts and Undiscovered Mineral Areas in Open LUDs with Higher Development Costs |                |
| Percent of Identified Mineral Tracts   | 20%            |
| Percent of Undiscovered Mineral Areas  | 35%            |
| Recreation Opportunity Spectrum Classes after 150 Years (millions of acres)                                    |                |
| Primitive and Semi-Primitive Non-Motorized   | 11.3           |
| Semi-Primitive Motorized   | 1.2            |
| Roaded Natural and Roaded Modified   | 4.3            |

<sup>1</sup> Totals may not add exactly due to rounding.

<sup>2</sup> Estimated forest land suitable for timber production represents the mapped suitable forest land minus the estimated portion that is unsuitable, but not mapped as such. The scheduled suitable forest land is the portion of the estimated suitable forest land that is scheduled for harvest by ASQ modeling.

<sup>3</sup> ASQ volumes expressed as annual averages and include sawlog plus utility.

<sup>4</sup> This evaluation provides an indication of potential effects; actual effects would depend on the volume that is under contract when the decision is implemented and whether potentially affected existing sales are cancelled or exempted as part of the decision.

**Alternative 5**

**Framework**

This is the No Action alternative. It represents a continuation of the current Forest Plan and would result in a mix of National Forest uses and activities. Timber would be managed in an area more extensive than under Alternative 3, but less extensive than under Alternative 4. The vast majority of current roadless areas would remain in a natural condition; however, the majority of roadless areas that contain substantial POG, outside of wilderness, would be partially developed. A total of 3.6 million acres of the Tongass would be in development LUDs and 13.2 million acres would be in non-development LUDs. This alternative is the same as the current Forest Plan (Alternative 11 from the 1997 FEIS plus amendments).

**Desired Conditions**

The vast majority of the currently undisturbed areas of the Forest remain in a natural state and most existing roadless areas remain roadless. Old growth conditions prevail on forest lands within roadless areas. A predictable and sustainable supply of forest products contribute to a limited integrated timber industry in Southeast Alaska, probably based in Ketchikan, Prince of Wales Island, Wrangell, and Hoonah. There would be sufficient volume under this alternative to support the existing sawmills. There would also be sufficient volume to support one or more veneer plants or an MDF or other chip-related operation, but probably not both. A mixture of old growth, recently harvested areas, and various ages of young growth occurs within roaded areas. Recreation, tourism, and subsistence opportunities occur in natural setting types, but roaded opportunities are considerably expanded from current conditions.

**Land Use Designations**

If Alternative 5 is selected, the LUD allocation acres shown in Table 2-11 would result. Figure 2-5 shows the distribution of LUDs across the Tongass under Alternative 5 according to three LUD groups (see Table 2-11 for definitions of the LUD groups). A complete LUD map is provided as the Alternative 5 map in the *Map Section* of the CD version of this EIS or in the *Map Packet* accompanying the EIS hard copy.

**Standards and Guidelines**

Under Alternative 5, the standards and guidelines identified in the current Forest Plan would be adopted. These represent the 1997 Forest Plan with amendments (USDA Forest Service 1997b).

**Selected Outputs**

Table 2-12 displays selected outputs and other measures associated with this alternative.

## 2 Alternatives

**Table 2-11  
Land Use Designations for Alternative 5<sup>1</sup>**

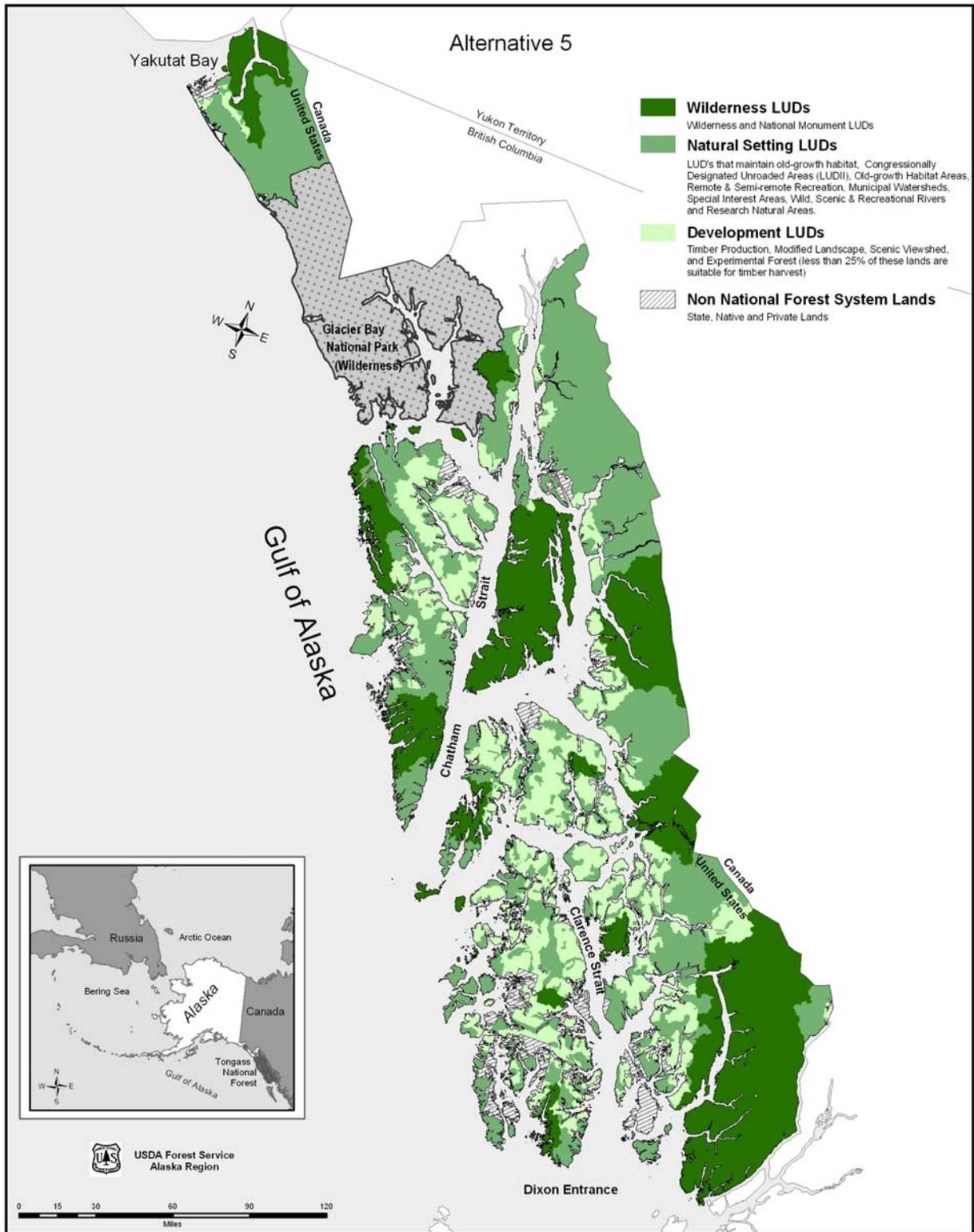
| Land Use Designation                       | Acres Allocated   | Net Change from Current Forest Plan Acres <sup>2</sup> |
|--|-------------------|--|
| <b>Wilderness LUD Group</b>                |                   |  |
| Wilderness                                 | 2,637,292         | 0  |
| National Monument <sup>3</sup>             | 3,278,734         | 0  |
| <b>Total for Wilderness LUD Group</b>      | <b>5,916,026</b>  | <b>0</b>   |
| <b>Natural Setting LUD Group</b>           |                   |  |
| LUD II                                     | 721,002           | 0  |
| Research Natural Area                      | 26,093            | 0  |
| Old Growth                                 | 1,182,424         | 0  |
| Special Interest Area                      | 174,463           | 0  |
| Enacted Municipal Watershed                | 45,226            | 0  |
| Wild, Scenic, and Recreational River       | 117,319           | 0  |
| Remote Recreation                          | 2,131,055         | 0  |
| Semi-Remote Recreation                     | 2,854,225         | 0  |
| <b>Total for Natural Setting LUD Group</b> | <b>7,251,808</b>  | <b>0</b>   |
| <b>Development LUD Group</b>               |                   |  |
| Experimental Forest                        | 17,095            | 0  |
| Scenic Viewshed                            | 477,219           | 0  |
| Modified Landscape                         | 601,362           | 0  |
| Timber Production                          | 2,510,298         | 0  |
| <b>Total for Development LUD Group</b>     | <b>3,605,974</b>  | <b>0</b>   |
| <b>Total National Forest System Lands</b>  | <b>16,773,808</b> | <b>0</b>   |

<sup>1</sup> When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and LUD II acres are always shown. The acreage for the Minerals LUD would be 170,514; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for the Transportation and Utility System LUD because it is a series of corridors with undefined width and imprecise locations. Totals may not exactly equal the sum of individual entries due to rounding.

<sup>2</sup> These changes from current Forest Plan acres are the differences from the decisions made in the 1997 Tongass Forest Plan Revision ROD, as amended, which is represented by Alternative 5.

<sup>3</sup> The majority of the National Monument acres are wilderness; only 166,942 acres are non-wilderness.

**Figure 2-5**  
**Wilderness, Natural Setting, and Development LUDs on the Tongass National Forest**  
**under Alternative 5**



## 2 Alternatives

**Table 2-12  
Selected Outputs and Measures Associated with Alternative 5<sup>1</sup>**

| Resource/Category  | Output/Measure |
|--|----------------|
| Percent in Wilderness LUD Group  | 35%            |
| Percent in Natural Setting LUD Group   | 43%            |
| Percent in Development LUD Group   | 21%            |
| Amount of Development LUDs in Inventoried Roadless Areas (millions of acres)                                   | 2.4            |
| Percent of Current Productive Old Growth Protected in Reserves (Wilderness/Nat. Mon. and Natural Setting LUDs) | 71%            |
| Productive Old Growth after 100+ Years (millions of acres)   | 4.5            |
| Estimated Forest Land Suitable for Timber Production (acres) <sup>2</sup>                                      | 757,000        |
| Scheduled Suitable Forest Land (acres) <sup>2</sup>  | 702,000        |
| Allowable Sale Quantity or ASQ (millions of board feet) <sup>3</sup>   |                |
| 1st Decade ASQ   | 267            |
| 2nd Decade ASQ   | 267            |
| Maximum New Road Construction after 100+ Years (miles)   | 3,874          |
| Maximum Average Annual Timber Harvest during 1st Decade, based on the ASQ (acres)                              | 10,308         |
| Potential Short-term Effects on Timber Industry <sup>4</sup>   |                |
| Effect on Timber Volume Under Contract   | None           |
| Effect on NEPA-cleared Volume  | None           |
| Effect on Timber Volume in Preparation   | None           |
| Percent of Identified Mineral Tracts and Undiscovered Mineral Areas in Open LUDs with Higher Development Costs |                |
| Percent of Identified Mineral Tracts   | 29%            |
| Percent of Undiscovered Mineral Areas  | 41%            |
| Recreation Opportunity Spectrum Classes after 150 Years (millions of acres)                                    |                |
| Primitive and Semi-Primitive Non-Motorized   | 11.9           |
| Semi-Primitive Motorized   | 1.3            |
| Roaded Natural and Roaded Modified   | 3.6            |

<sup>1</sup> Totals may not add exactly due to rounding.

<sup>2</sup> Estimated forest land suitable for timber production represents the mapped suitable forest land minus the estimated portion that is unsuitable, but not mapped as such. The scheduled suitable forest land is the portion of the estimated suitable forest land that is scheduled for harvest by ASQ modeling. Slight differences in suitable acres between Alternative 5 (shown above) and Alternative 11 of the 1997 Final EIS are caused by: 1) changes in ownership, 2) changes in LUDs, and 3) the use of different estimation methods.

<sup>3</sup> ASQ volumes expressed as annual averages and include sawlog plus utility.

<sup>4</sup> This evaluation provides an indication of potential effects; actual effects would depend on the volume that is under contract when the decision is implemented and whether potentially affected existing sales are cancelled or exempted as part of the decision.

**Alternative 6**

**Framework**

This is the Proposed Action alternative. It is very similar to the Alternative 5 (No Action) alternative in terms of LUD allocations; however, it includes extensive refinements to the boundaries of the small Old-Growth Reserves (based on a recently completed interagency evaluation), new Geologic Special Interest Areas, a new Experimental Forest, the conversion of a large area of Remote Recreation LUD north of Juneau to Semi-Remote Recreation, and other minor LUD refinements. Timber would be managed in an area more extensive than under Alternative 3, but less extensive than under Alternative 4. The vast majority of current roadless areas would remain in a natural condition; however, the majority of roadless areas that contain substantial POG, outside of wilderness, would be partially developed. A total of 3.5 million acres of the Tongass would be in development LUDs and 13.3 million acres would be in non-development LUDs. Specific LUD changes under this alternative would include the addition and modification of a number of Geologic Special Interest Areas, recommendations to change the Young Bay Experimental Forest to Semi-remote Recreation and the Cowee-Davies Creek watersheds from Scenic Viewshed to Experimental Forest, and converting a large area of Remote Recreation LUD north of Juneau to Semi-Remote Recreation. It also would include extensive refinements to the boundaries of the small Old-Growth Reserves, based on a recently completed interagency evaluation.

This alternative is similar to Alternative 11 of the 1997 FEIS.

**Desired Conditions**

The vast majority of the currently undisturbed areas of the Forest remain in a natural state and most existing roadless areas remain roadless. Old growth conditions prevail on forest lands within roadless areas. A predictable and sustainable supply of forest products contribute to a limited integrated timber industry in Southeast Alaska, probably based in Ketchikan, Prince of Wales Island, Wrangell, and Hoonah. There would be sufficient volume under this alternative to support the existing sawmills. There would also be sufficient volume to support one or more veneer plants or an MDF or other chip-related operation, but probably not both. Populations of wildlife dependent on old-growth and/or unroaded habitats have a moderately high likelihood of being maintained as viable and well-distributed across the Tongass. A mixture of old growth, recently harvested areas, and various ages of young growth occurs within roaded areas. Recreation, tourism, and subsistence opportunities occur in natural setting types, but roaded opportunities are considerably expanded from current conditions.

**Land Use Designations**

If Alternative 6 is selected, the LUD allocation acres shown in Table 2-13 would result. Figure 2-6 shows the distribution of LUDs across the Tongass under Alternative 6 according to three LUD groups (see Table 2-13 for definitions of the LUD groups). A complete LUD map is provided as the Alternative 6 map in the *Map Section* of the CD version of this EIS or in the *Map Packet* accompanying the EIS hard copy.

**Management Prescriptions and Standards and Guidelines**

Under Alternative 6, the management prescriptions and standards and guidelines identified in the Final Proposed Forest Plan would be adopted. These are generally the same as the management prescriptions and standards and guidelines in the current Forest Plan; however, a number of changes and refinements are proposed. A summary of the main changes to the current Forest Plan is provided above in the section titled “Final Proposed Forest Plan.”

**Selected Outputs**

Table 2-14 displays selected outputs and other measures associated with this alternative.

## 2 Alternatives

**Table 2-13**  
**Land Use Designations for Alternative 6<sup>1</sup>**

| Land Use Designation                       | Acres Allocated   | Net Change from Current Forest Plan Acres <sup>2</sup> |
|--|-------------------|--|
| <b>Wilderness LUD Group</b>                |                   |  |
| Wilderness                                 | 2,637,292         | 0  |
| National Monument <sup>3</sup>             | 3,278,734         | 0  |
| <b>Total for Wilderness LUD Group</b>      | <b>5,916,026</b>  | <b>0</b>   |
| <b>Natural Setting LUD Group</b>           |                   |  |
| LUD II                                     | 721,002           | 0  |
| Research Natural Area                      | 26,093            | 0  |
| Old Growth <sup>4</sup>                    | 1,221,173         | 38,749   |
| Special Interest Area <sup>4</sup>         | 221,176           | 46,712   |
| Enacted Municipal Watershed                | 45,226            | 0  |
| Wild, Scenic, and Recreational River       | 117,319           | 0  |
| Remote Recreation                          | 2,033,665         | (97,390)   |
| Semi-Remote Recreation                     | 3,014,704         | 160,479  |
| <b>Total for Natural Setting LUD Group</b> | <b>7,400,359</b>  | <b>148,551</b>   |
| <b>Development LUD Group</b>               |                   |  |
| Experimental Forest                        | 31,405            | 14,309   |
| Scenic Viewshed                            | 442,101           | (35,118)   |
| Modified Landscape                         | 590,338           | (11,024)   |
| Timber Production                          | 2,393,576         | (116,721)  |
| <b>Total for Development LUD Group</b>     | <b>3,457,420</b>  | <b>(148,551)</b>                                       |
| <b>Total National Forest System Lands</b>  | <b>16,773,806</b> | <b>0</b>   |

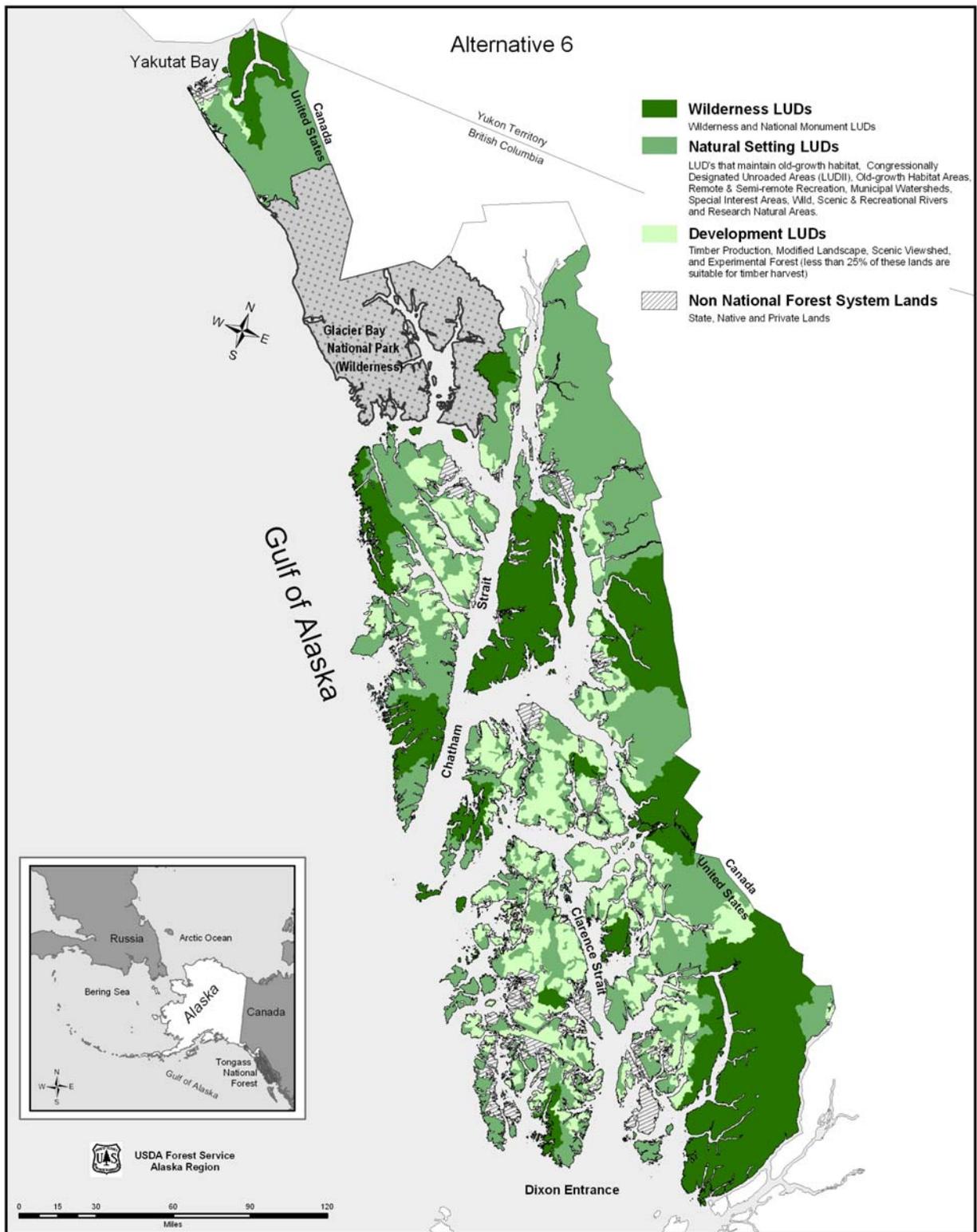
<sup>1</sup> When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and LUD II acres are always shown. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for the Transportation and Utility System LUD because it is a series of corridors with undefined width and imprecise locations. Totals may not exactly equal the sum of individual entries due to rounding.

<sup>2</sup> These changes from current Forest Plan acres are the differences from the decision made in the 1997 Tongass Forest Plan Revision ROD, as amended, which is represented by Alternative 5.

<sup>3</sup> The majority of the National Monument acres are wilderness; only 166,942 acres are non-wilderness.

<sup>4</sup> Small old-growth reserves and Special Interest Area LUDs increased relative to Alternative 5; however, they overlap extensively, especially on Heceta, Kosciusko, and northeast Chichagof Islands, and the acreages where they overlap were counted with Special Interest Areas.

**Figure 2-6**  
**Wilderness, Natural Setting, and Development LUDs on the Tongass National Forest**  
**under Alternative 6**



## 2 Alternatives

**Table 2-14  
Selected Outputs and Measures Associated with Alternative 6<sup>1</sup>**

| Resource/Category  | Output/Measure |
|--|----------------|
| Percent in Wilderness LUD Group  | 35%            |
| Percent in Natural Setting LUD Group   | 44%            |
| Percent in Development LUD Group   | 21%            |
| Amount of Development LUDs in Inventoried Roadless Areas (millions of acres)                                   | 2.3            |
| Percent of Current Productive Old Growth Protected in Reserves (Wilderness/Nat. Mon. and Natural Setting LUDs) | 72%            |
| Productive Old Growth after 100+ Years (millions of acres)   | 4.5            |
| Estimated Forest Land Suitable for Timber Production (acres) <sup>2</sup>                                      | 775,000        |
| Scheduled Suitable Forest Land (acres) <sup>2</sup>  | 689,000        |
| Allowable Sale Quantity or ASQ (millions of board feet) <sup>3</sup>   |                |
| 1st Decade ASQ   | 267            |
| 2nd Decade ASQ   | 267            |
| Maximum New Road Construction after 100+ Years (miles)   | 3,744          |
| Maximum Average Annual Timber Harvest during 1st Decade, based on the ASQ (acres)                              | 9,806          |
| Potential Short-term Effects on Timber Industry <sup>4</sup>   |                |
| Effect on Timber Volume Under Contract   | None           |
| Effect on NEPA-cleared Volume  | None           |
| Effect on Timber Volume in Preparation   | None           |
| Percent of Identified Mineral Tracts and Undiscovered Mineral Areas in Open LUDs with Higher Development Costs |                |
| Percent of Identified Mineral Tracts   | 25%            |
| Percent of Undiscovered Mineral Areas  | 41%            |
| Recreation Opportunity Spectrum Classes after 150 Years (millions of acres)                                    |                |
| Primitive and Semi-Primitive Non-Motorized   | 12.0           |
| Semi-Primitive Motorized   | 1.3            |
| Roaded Natural and Roaded Modified   | 3.5            |

<sup>1</sup> Totals may not add exactly due to rounding.

<sup>2</sup> Estimated forest land suitable for timber production represents the mapped suitable forest land minus the estimated portion that is unsuitable, but not mapped as such. The scheduled suitable forest land is the portion of the estimated suitable forest land that is scheduled for harvest by ASQ modeling.

<sup>3</sup> ASQ volumes expressed as annual averages and include sawlog plus utility.

<sup>4</sup> This evaluation provides an indication of potential effects; actual effects would depend on the volume that is under contract when the decision is implemented and whether potentially affected existing sales are cancelled or exempted as part of the decision.

**Alternative 7**

**Framework**

Under Alternative 7, forest management would provide a mix of National Forest uses and activities, but would give much additional emphasis to timber management, relative to the current Forest Plan. Timber would be managed on a considerably expanded land base compared with the current Forest Plan. The vast majority of current roadless areas would remain in a natural condition; however, the majority of roadless areas that contain substantial POG outside of Wilderness, would be fully developed. A total of 5.0 million acres of the Tongass would be in development LUDs and 11.7 million acres would be in non-development LUDs. Almost all areas identified as development LUDs in Alternative 5 would also be development LUDs in this alternative, in addition to other areas. Specific LUD changes under this alternative would include the addition and modification of a number of Geologic Special Interest Areas and recommendations to change the Young Bay Experimental Forest to Semi-remote Recreation and the Cowee-Davies Creek watersheds from Scenic Viewshed to Experimental Forest.

This alternative is similar to Alternative 2 of the 1997 FEIS.

**Desired Conditions**

The vast majority of the currently undisturbed areas of the Forest remain in a natural state and most existing roadless areas remain roadless. However, all of the roadless areas to be developed under the current Forest Plan are developed along with additional roadless areas. Old growth conditions prevail on forest lands within roadless areas. The Tongass produces a predictable and sustainable supply of forest products that completely satisfies the demand from a high integrated timber industry in Southeast Alaska, probably based in Ketchikan, Prince of Wales Island, Wrangell, Hoonah, and other communities. Timber from private and state lands is not required to satisfy timber demand. A mixture of old growth, recently harvested areas, and various ages of young growth occurs within roaded areas. Recreation, tourism, and subsistence opportunities occur in natural setting types, but roaded opportunities are substantially expanded from current conditions.

**Land Use Designations**

If Alternative 7 is selected, the LUD allocation acres shown in Table 2-15 would result. Figure 2-7 shows the distribution of LUDs across the Tongass under Alternative 7 according to three LUD groups (see Table 2-15 for definitions of the LUD groups). A complete LUD map is provided as the Alternative 7 map in the *Map Section* of the CD version of this EIS or in the *Map Packet* accompanying the EIS hard copy.

**Management Prescriptions and Standards and Guidelines**

Under Alternative 7, the standards and guidelines identified in the current Forest Plan would be adopted, with the exceptions noted below. The current Forest Plan represents the 1997 Forest Plan with amendments (USDA Forest Service 1997b). The exceptions include:

- The Beach and Estuary Fringe buffer is changed to 500 feet. along the beach fringe and 1,000 feet. around estuaries.
- The Riparian Standards and Guidelines are modified so that buffers are not required along Class III streams.
- The Old-Growth Habitat LUD and its management prescription is not used and is deleted.
- The goshawk foraging habitat standard and guideline, the high-value marten habitat standard and guideline, and the proposed Legacy standard and guideline would not be implemented.
- The goshawk nesting standard and guideline would not be implemented.

## 2 Alternatives

### Selected Outputs

Table 2-16 displays selected outputs and other measures associated with this alternative.

**Table 2-15  
Land Use Designations for Alternative 7<sup>1</sup>**

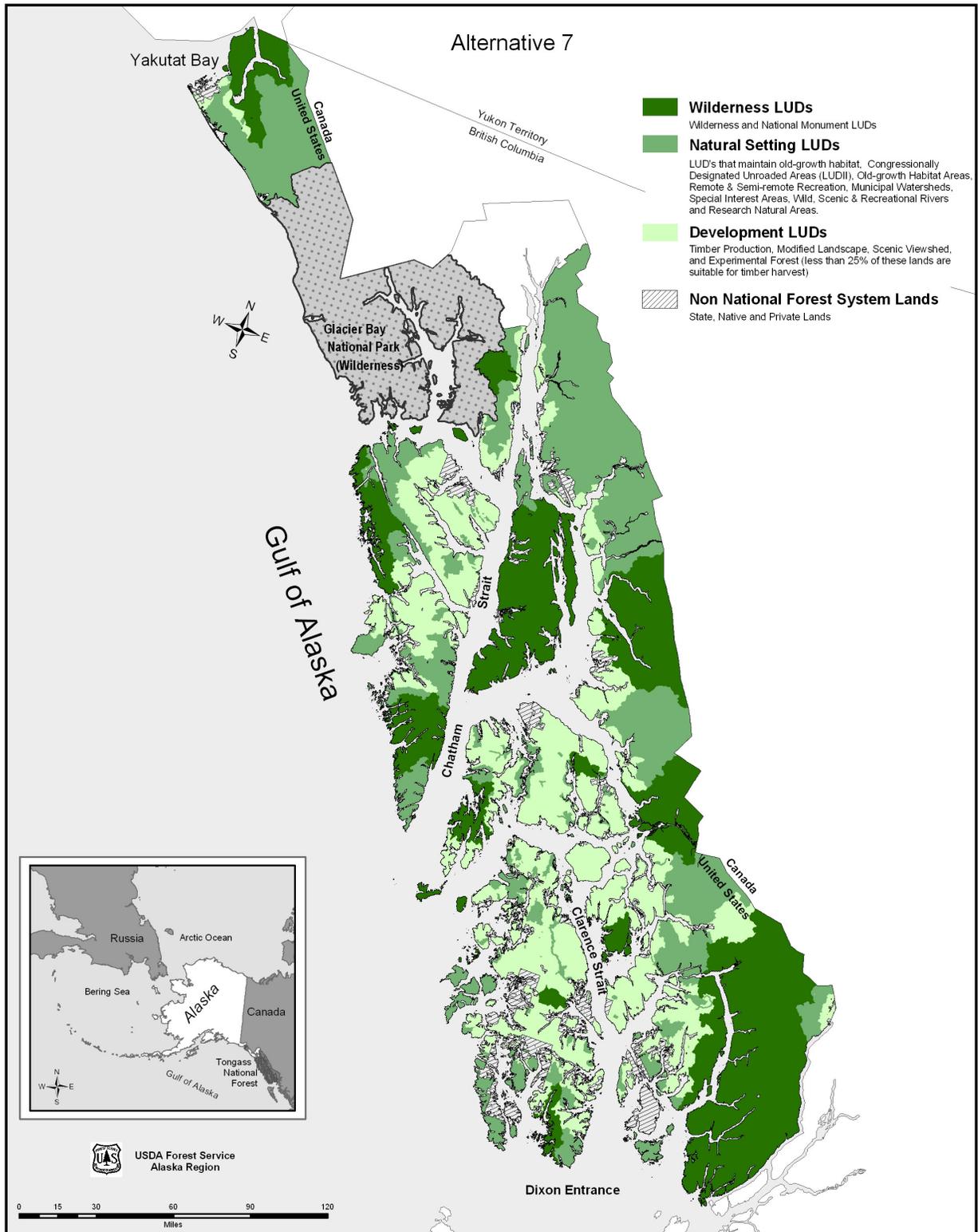
| Land Use Designation                       | Acres Allocated   | Net Change from Current Forest Plan Acres <sup>2</sup> |
|--|-------------------|--|
| <b>Wilderness LUD Group</b>                |                   |  |
| Wilderness                                 | 2,637,292         | 0  |
| National Monument <sup>3</sup>             | 3,278,734         | 0  |
| <b>Total for Wilderness LUD Group</b>      | <b>5,916,026</b>  | <b>0</b>   |
| <b>Natural Setting LUD Group</b>           |                   |  |
| LUD II                                     | 721,002           | 0  |
| Research Natural Area                      | 26,093            | 0  |
| Old Growth                                 | 0                 | (1,182,424)  |
| Special Interest Area                      | 221,176           | 46,712   |
| Enacted Municipal Watershed                | 45,226            | 0  |
| Wild, Scenic, and Recreational River       | 117,319           | 0  |
| Remote Recreation                          | 2,088,185         | (42,870)   |
| Semi-Remote Recreation                     | 2,589,082         | (265,143)  |
| <b>Total for Natural Setting LUD Group</b> | <b>5,808,083</b>  | <b>(1,433,725)</b>                                     |
| <b>Development LUD Group</b>               |                   |  |
| Experimental Forest                        | 31,405            | 14,310   |
| Scenic Viewshed                            | 781,705           | 304,486  |
| Modified Landscape                         | 840,342           | 238,980  |
| Timber Production                          | 3,396,243         | 885,946  |
| <b>Total for Development LUD Group</b>     | <b>5,049,695</b>  | <b>1,443,725</b>                                       |
| <b>Total National Forest System Lands</b>  | <b>16,773,804</b> | <b>0</b>   |

<sup>1</sup> When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included, except that total Wilderness, Wilderness National Monument, and LUD II acres are always shown. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for the Transportation and Utility System LUD because it is a series of corridors with undefined width and imprecise locations. Totals may not exactly equal the sum of individual entries due to rounding.

<sup>2</sup> These changes from current Forest Plan acres are the differences from the decision made in the 1997 Tongass Forest Plan Revision ROD, as amended, which is represented by Alternative 5.

<sup>3</sup> The majority of the National Monument acres are wilderness; only 166,942 acres are non-wilderness.

**Figure 2-7  
Wilderness, Natural Setting, and Development LUDs on the Tongass National Forest  
under Alternative 7**



## 2 Alternatives

**Table 2-16  
Selected Outputs and Measures Associated with Alternative 7<sup>1</sup>**

| Resource/Category  | Output/Measure |
|--|----------------|
| Percent in Wilderness LUD Group  | 35%            |
| Percent in Natural Setting LUD Group   | 35%            |
| Percent in Development LUD Group   | 30%            |
| Amount of Development LUDs in Inventoried Roadless Areas (millions of acres)                                   | 3.7            |
| Percent of Current Productive Old Growth Protected in Reserves (Wilderness/Nat. Mon. and Natural Setting LUDs) | 57%            |
| Productive Old Growth after 100+ Years (millions of acres)   | 4.1            |
| Estimated Forest Land Suitable for Timber Production (acres) <sup>2</sup>                                      | 1,174,000      |
| Scheduled Suitable Forest Land (acres) <sup>2</sup>  | 1,088,000      |
| Allowable Sale Quantity or ASQ (millions of board feet) <sup>3</sup>   |                |
| 1st Decade ASQ   | 421            |
| 2nd Decade ASQ   | 421            |
| Maximum New Road Construction after 100+ Years (miles)   | 5,825          |
| Maximum Average Annual Timber Harvest during 1st Decade, based on the ASQ (acres)                              | 15,827         |
| Potential Short-term Effects on Timber Industry <sup>4</sup>   |                |
| Effect on Timber Volume Under Contract   | None           |
| Effect on NEPA-cleared Volume  | None           |
| Effect on Timber Volume in Preparation   | None           |
| Percent of Identified Mineral Tracts and Undiscovered Mineral Areas in Open LUDs with Higher Development Costs |                |
| Percent of Identified Mineral Tracts   | 18%            |
| Percent of Undiscovered Mineral Areas  | 33%            |
| Recreation Opportunity Spectrum Classes after 150 Years (millions of acres)                                    |                |
| Primitive and Semi-Primitive Non-Motorized   | 11.1           |
| Semi-Primitive Motorized   | 1.2            |
| Roaded Natural and Roaded Modified   | 4.5            |

<sup>1</sup> Totals may not add exactly due to rounding.

<sup>2</sup> Estimated forest land suitable for timber production represents the mapped suitable forest land minus the estimated portion that is unsuitable, but not mapped as such. The scheduled suitable forest land is the portion of the estimated suitable forest land that is scheduled for harvest by ASQ modeling.

<sup>3</sup> ASQ volumes expressed as annual averages and include sawlog plus utility.

<sup>4</sup> This evaluation provides an indication of potential effects; actual effects would depend on the volume that is under contract when the decision is implemented and whether potentially affected existing sales are cancelled or exempted as part of the decision.

**Comparison of the Alternatives**

This section briefly compares the environmental consequences of the seven alternatives with respect to the key issues described in Chapter 1. This comparison is based on the effects analysis presented in Chapter 3.

Prior to presenting the effects comparison, four tables and a figure are displayed to help the reader compare the differences among the alternatives. Table 2-17 and Figure 2-8 summarize the LUD allocations of the alternatives using LUD Group combinations. The four LUD Groups combine the individual LUDs in terms of similarities in management and/or potential effects as described in the *Introduction* to Chapter 3. The other components that help define each alternative beyond LUD allocations are summarized in Table 2-18.

Table 2-19 displays some of the key indicators or measures that are used to quantitatively compare the alternatives relative to the key issues. In addition, Table 2-20, located at the end of this chapter, represents a “Summary of Effects Matrix.” This table allows the reader to compare the effects of the alternatives on essentially all resource areas simultaneously, so that a cumulative picture of the net effects can be obtained. This table presents many quantitative measures, but it uses qualitative comparisons where quantitative measures are not feasible. In this regard, it may be used to help consider the net public benefits associated with each alternative.

**Key Issue 1 – Protection of high value roadless areas from road development and timber harvest activity on the Tongass National Forest is of local and national importance, particularly for wildlife and biodiversity, recreation, and tourism.**

The Tongass includes very large undeveloped land areas, with several portions of the Forest consisting of contiguous roadless areas that exceed one million acres (and are often many times larger than that) and represent large, unfragmented blocks of wildlife habitat. This scale of roadless lands is not available elsewhere in the National Forest System, except on the Chugach National Forest.

Roadless areas are considered important because of their wildlife habitat and recreation values and their importance for tourism. They are also important because of the passive use values and ecosystem services values they provide. Passive use values represent the value that individuals assign to a resource independent of their use of that resource and typically include existence, option, and bequest values.

**Table 2-17  
Land Use Designation Group Comparison by Alternative (million acres)<sup>1</sup>**

| Alternative | Wilderness <sup>2</sup> | Natural Setting | Moderate Development | Intensive Development |
|-------------|-------------------------|-----------------|----------------------|-----------------------|
| 1           | 5.9                     | 10.0            | 0.3                  | 0.6                   |
| 2           | 5.9                     | 8.9             | 0.6                  | 1.4                   |
| 3           | 5.9                     | 8.1             | 0.8                  | 2.0                   |
| 4           | 5.9                     | 6.1             | 1.5                  | 3.2                   |
| 5           | 5.9                     | 7.3             | 1.1                  | 2.5                   |
| 6           | 5.9                     | 7.4             | 1.1                  | 2.4                   |
| 7           | 5.9                     | 5.8             | 1.7                  | 3.4                   |

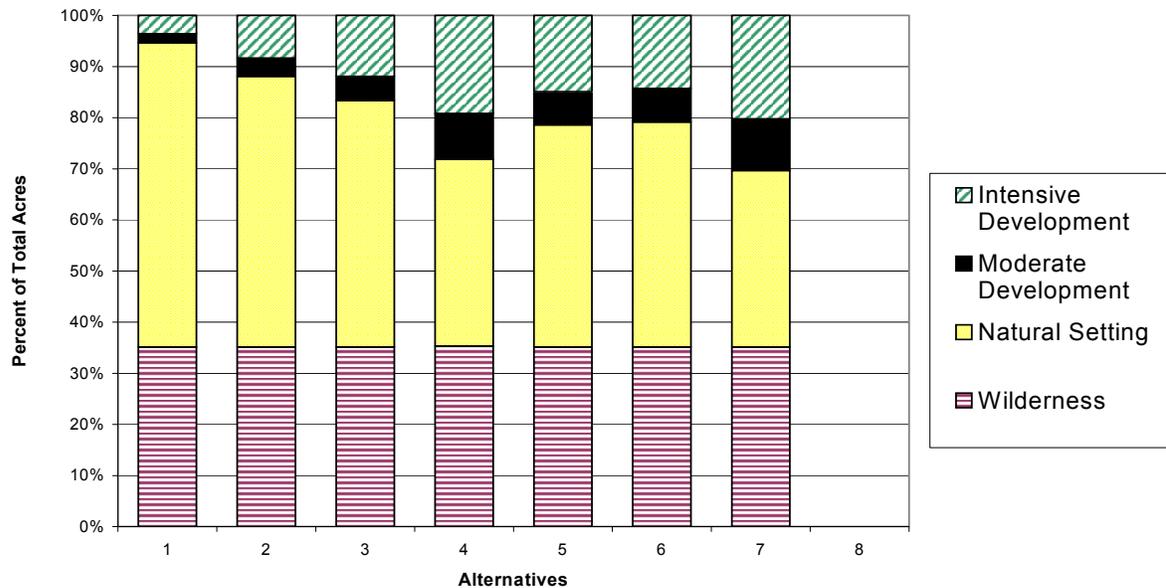
<sup>1</sup> LUD Group combinations are described in the *Introduction* to Chapter 3 (Table 3.1-1).

<sup>2</sup> Wilderness LUD group includes 166.942 acres of Nonwilderness National Monument.

Note: Roadless area acreages are correlated with, but not the same as the LUD Group acreages. For example, some roads exist within portions of some Natural Setting LUDs and no roads exist in many areas of development LUDs.

## 2 Alternatives

**Figure 2-8**  
**Land Use Designation Group Comparison by Alternative (percent)**



### Direct Effects on Roadless Areas

The Tongass National Forest is about 91 percent roadless, including wilderness. Only small areas where communities are developing, or where road construction and timber harvest have occurred, are “developed” to any noticeable degree. Developed areas and small unroaded areas (not included in inventoried roadless areas) cover about 1.51 million acres, or about 9 percent of the Tongass, wilderness covers about 5.75 million acres, or about 34 percent, and inventoried roadless areas (outside of wilderness) cover about 9.51 million acres, or about 57 percent.

Alternative 1 is designed to avoid inventoried roadless areas. Because of this, after 100 years or more (and full development of these LUD areas) 91 percent of the Tongass and 85 percent of Southeast Alaska (all Alaska lands southeast of Yakutat Bay) would still be in roadless or wilderness.

Alternatives 2 and 3 would progressively enter more roadless areas with 0.8 million acres and 1.7 million acres of development LUDs in roadless areas, respectively. Alternative 2 would ultimately result in 87 percent of the Tongass and 82 percent of Southeast Alaska in roadless or wilderness and Alternative 3 would result in 83 percent and 79 percent.

Next in progression into roadless areas, Alternatives 5 and 6 would include 2.4 and 2.3 million acres of development LUDs in roadless, respectively. Alternative 5 would ultimately result in 80 percent of the Tongass and 76 percent of Southeast Alaska being in roadless or wilderness. These percentages would be 81 and 77 for Alternative 6.

Finally, Alternatives 4 and 7 both enter roadless areas to a higher degree. Alternative 4 would have 3.4 million acres of development LUDs in roadless and Alternative 7 would have 3.7 million. After 100 years or more of implementation,

Alternative 4 would result in 76 percent of the Tongass and 73 percent of Southeast Alaska and Alternative 7 would result in 75 percent of the Tongass and 72 percent of Southeast Alaska continuing as roadless or in wilderness.

**Distribution of Roadless Areas**

Significant acreages of roadless areas would remain in all biogeographic provinces under all alternatives; however, some would maintain a higher percentage than others. Under Alternatives 1 and 2, none of the 21 biogeographic provinces within the Tongass boundary would contain less than 50 percent of their areas in Non-development LUDs. Alternative 1 would have 17 of the 21 provinces containing 90 percent or more acreage in non-development LUDs and Alternative 2 would have 13 provinces.

**Table 2-18  
Alternative Components**

| Component   | Alternative                      |                                  |                                  |                                  |                                  |                                  |  |
|---|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|--|
|   | 1                                | 2                                | 3                                | 4                                | 5                                | 6                                | 7  |
| Alternative Base <sup>1</sup>                       | 2003 – Alt 8                     | None                             | 2003 – Alt 5                     | 1997 – Alt 6                     | 1997 – Alt 11                    | 1997 – Alt 11                    | 1997 – Alt 2                               |
| Old-Growth Reserve Strategy <sup>2</sup>            | All, plus refined Small OGRs     | All, plus refined Small OGRs     | All, plus refined Small OGRs     | 4 Biogeo. Provinces              | All                              | All, plus refined Small OGRs     | None                                       |
| OG Retention/VCU                                    | None                             | None                             | None                             | 33%                              | None                             | None                             | None                                       |
| Beach & Estuary Fringe Buffer                       | Beach = 1,000'<br>Estry.= 1,000' | Beach = 500'<br>Estry.= 1,000'             |
| Riparian S&Gs                                       | Same as 1997 Forest Plan         | Same as '97 Plan, but no Class III buffers |
| 1997 Goshawk & Marten S&Gs                          | No                               | No                               | No                               | No                               | Yes                              | No                               | No   |
| New Forest-wide Legacy S&G                          | Yes                              | Yes                              | Yes                              | No                               | No                               | Yes                              | No   |
| Goshawk Nest S&Gs                                   | Apply Revised Version            | Apply Revised Version            | Apply Revised Version            | Apply Revised Version            | Apply Original Version           | Apply Revised Version            | Apply General Raptor S&Gs Only             |
| Modified Small Old-Growth Reserve Boundaries        | Yes                              | Yes                              | Yes                              | No                               | No                               | Yes                              | No   |
| Experimental Forest Replacement                     | Yes                              | Yes                              | Yes                              | Yes                              | No                               | Yes                              | Yes  |
| Additional/Modified Geologic Special Interest Areas | Yes                              | Yes                              | Yes                              | Yes                              | No                               | Yes                              | Yes  |
| Other S&G Changes in Proposed Forest Plan           | Yes                              | Yes                              | Yes                              | Yes                              | No                               | Yes                              | No   |

<sup>1</sup> Identifies the previous Forest Plan NEPA document and the specific alternative that the current alternative is largely based on (1997 = the 1997 FEIS; 2003 = 2003 SEIS). However, many changes have been made.

<sup>2</sup> This component refers to the use of the system of old-growth habitat reserves to address wildlife viability. Such a system is in addition to reserves that already exist, such as within Wilderness or Legislated LUD II areas.

**Definitions**

Reserves:

All = Large, Medium, and Small reserves identified in the current Forest Plan

4 Biogeo. Provinces = N. POW, Kupreanof/Mitkof, Dall Island, NE Chichagof, and individual reserves (Myers Chuck, Lake Eva, Wright Lake).

S&Gs = Standards and Guidelines

VCU = Value Comparison Unit (roughly a watershed)

## 2 Alternatives

**Table 2-19  
Comparison of Alternatives**

| Resource/Category  | Unit of Measure    | Alternative |     |     |     |     |     |     |
|--|--------------------|-------------|-----|-----|-----|-----|-----|-----|
|  |                    | 1           | 2   | 3   | 4   | 5   | 6   | 7   |
| <b>Key Issue 1 – Long-term Protection of High-value Roadless Areas</b>   |                    |             |     |     |     |     |     |     |
| Inventoried Roadless Areas in development LUDs (acres and percent of all roadless areas)   | Millions of Acres  | 0.0         | 0.8 | 1.7 | 3.4 | 2.4 | 2.3 | 3.7 |
|  | Percent            | 0           | 9   | 18  | 36  | 26  | 24  | 39  |
| Amount of Timber Harvest in current Inventoried Roadless Areas after 100+ years  | Thousands of Acres | 0           | 89  | 186 | 498 | 316 | 307 | 583 |
| Minimum Percent of Tongass in Inventoried Roadless Areas after 100+ years (assumes 75% of development LUD areas and 0% of non-development LUD areas become roaded)   | Percent            | 57          | 53  | 49  | 41  | 46  | 46  | 40  |
| Percent of Tongass in Wilderness (including Wilderness National Monument)  | Percent            | 34          | 34  | 34  | 34  | 34  | 34  | 34  |
| Percent of Tongass in Wilderness and Inventoried Roadless Areas after 100+ years   | Percent            | 91          | 87  | 83  | 76  | 80  | 81  | 75  |
| Percent of Southeast Alaska in Wilderness and Inventoried Roadless Areas after 100+ years (assumes all non-NFS lands become roaded, except for Glacier Bay NP and 50% of non-NFS lands in the Haines/Skagway area) | Percent            | 85          | 82  | 79  | 73  | 76  | 77  | 72  |
| Number of the 21 Biogeographic Provinces with Less than 50% of Tongass Lands in Non-development LUDs   | Count              | 0           | 0   | 2   | 5   | 3   | 3   | 5   |
| <b>Key Issue 2—Provision of Sufficient Timber to Meet Market Demand</b>  |                    |             |     |     |     |     |     |     |
| <b>Long-Term Effects (Second Decade On)</b>  |                    |             |     |     |     |     |     |     |
| Percent Change in Suitable Acres   | Percent            |             |     |     |     |     |     |     |
| ASQ (average annual)   | MMBF               | 49          | 151 | 205 | 360 | 267 | 267 | 421 |
| NIC I Component of the ASQ   | MMBF               | 49          | 143 | 187 | 314 | 239 | 236 | 370 |
| <b>Ability to Meet the Timber Demand Scenarios in 2022</b>   |                    |             |     |     |     |     |     |     |
| Scenario 1—Limited Lumber Industry   | Yes/No             | No          | Yes | Yes | Yes | Yes | Yes | Yes |
| Scenario 2—Expanded Lumber Industry  | Yes/No             | No          | No  | Yes | Yes | Yes | Yes | Yes |
| Scenario 3—Medium Integrated Industry  | Yes/No             | No          | No  | Yes | Yes | Yes | Yes | Yes |
| Scenario 4—High Integrated Industry  | Yes/No             | No          | No  | No  | Yes | No  | No  | Yes |
| <b>Annual Harvest as a Percent of Processing Capacity</b>  |                    |             |     |     |     |     |     |     |
| Active Installed Processing Capacity (261 MMBF)  | Percent            | 9           | 27  | 36  | 60  | 46  | 45  | 71  |
| Total Installed Processing Capacity (361 MMBF)   | Percent            | 7           | 20  | 26  | 43  | 33  | 33  | 51  |

**Table 2-19 (continued)  
Comparison of Alternatives**

| Resource/Category   | Unit of Measure    | Alternative |             |              |              |              |              |              |
|---|--------------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
|   |                    | 1           | 2           | 3            | 4            | 5            | 6            | 7            |
| <b>Key Issue 2—Provision of Sufficient Timber to Meet Market Demand (continued)</b>   |                    |             |             |              |              |              |              |              |
| <b>Direct Employment</b>  |                    |             |             |              |              |              |              |              |
| Logging   | Job-Years          | 365         | 583         | 680          | 880          | 803          | 801          | 1,098        |
| Sawmills  | Job-Years          | 129         | 336         | 428          | 616          | 544          | 542          | 823          |
| <b>Total</b>  | Job-Years          | <b>494</b>  | <b>919</b>  | <b>1,108</b> | <b>1,496</b> | <b>1,346</b> | <b>1,343</b> | <b>1,922</b> |
| Total Net Change from Alternative 5 (No Action)   | Percent            | -63         | -32         | -18          | 11           | 0            | 0            | 43           |
| <b>Direct Income</b>  |                    |             |             |              |              |              |              |              |
| Logging   | \$ million         | 15.4        | 24.6        | 28.7         | 37.2         | 33.9         | 33.8         | 46.4         |
| Sawmills  | \$ million         | 4.1         | 10.6        | 13.6         | 19.5         | 17.2         | 17.2         | 26.1         |
| <b>Total</b>  | \$ million         | <b>19.5</b> | <b>35.3</b> | <b>42.3</b>  | <b>56.7</b>  | <b>51.1</b>  | <b>51.0</b>  | <b>72.5</b>  |
| <b>Potential Short-Term Effects (2007 to 2009)<sup>1</sup></b>  |                    |             |             |              |              |              |              |              |
| Effect on Timber Volume Under Contract  | Percent            | High        | None        | None         | None         | None         | None         | None         |
| Effect on NEPA-Cleared Timber Volume  | Percent            | Low         | Low         | None         | None         | None         | None         | None         |
| Effect on Timber Volume in Preparation  | Percent            | Low         | Very Low    | Very Low     | None         | None         | None         | None         |
| <b>Key Issue 3 – Protection of Wildlife Habitat and Biodiversity</b>  |                    |             |             |              |              |              |              |              |
| <b>Harvest of Productive Old Growth</b>   |                    |             |             |              |              |              |              |              |
| Maximum Harvest of Productive Old Growth on NFS Lands after 100+ years  | Thousands of Acres | 86          | 215         | 313          | 656          | 463          | 445          | 807          |
| Minimum Percent of Original Productive Old Growth Remaining on NFS Lands after 100+ years   | Percent            | 90          | 88          | 86           | 79           | 83           | 83           | 77           |
| Minimum Percent of Original Productive Old Growth Remaining on All Lands in SE Alaska after 100+ years  | Percent            | 82          | 80          | 78           | 73           | 76           | 76           | 71           |
| <b>Road Development</b>   |                    |             |             |              |              |              |              |              |
| Maximum New Road Miles Developed on NFS lands after 100+ years (4,942 miles of existing roads)  | Miles              | 774         | 2,079       | 2,799        | 4,890        | 3,874        | 3,744        | 5,825        |
| Percent of WAAs with Total Road Density on NFS Lands greater than 1.0 mile/sq.mile after 100+ years (currently 8% of 188 WAAs)                          | Percent            | 11          | 16          | 18           | 23           | 19           | 18           | 25           |
| Number of WAAs with Total Road Density on All Lands (Inside Forest Boundary) greater than 1.0 mile/sq.mile after 100+ years (currently 14% of 191 WAAs) | Percent            | 20          | 23          | 24           | 28           | 26           | 25           | 31           |

<sup>1</sup> This evaluation provides an indication of potential effects; actual effects would depend on the volume that is under contract when the decision is implemented and whether potentially affected existing sales are cancelled or exempted as part of the decision.

## 2 Alternatives

**Table 2-19 (continued)  
Comparison of Alternatives**

| Resource/Category   | Unit of Measure | Alternative       |                   |                   |                 |                   |                   |                 |
|---|-----------------|-------------------|-------------------|-------------------|-----------------|-------------------|-------------------|-----------------|
|   |                 | 1                 | 2                 | 3                 | 4               | 5                 | 6                 | 7               |
| <b>Key Issue 3 – Protection of Wildlife Habitat and Biodiversity (continued)</b>  |                 |                   |                   |                   |                 |                   |                   |                 |
| <b>Representation of Old Growth Forests</b>   |                 |                   |                   |                   |                 |                   |                   |                 |
| Number of Biogeographic Provinces with 75% or more of the Original Productive Old Growth Remaining after 100+ years – All Lands in SE Alaska (currently 22 out of 23)*            | Count           | 19                | 18                | 16                | 12              | 13                | 13                | 11              |
| Number of Biogeographic Provinces with less than 50% of the Original Productive Old Growth Remaining after 100+ years – All Lands in SE Alaska (currently 0 out of 23)*           | Count           | 0                 | 0                 | 0                 | 1               | 0                 | 0                 | 1               |
| Number of Biogeographic Provinces with more than 50% of the Original Large-tree Productive Old Growth Remaining after 100+ years – All Lands in SE Alaska (currently 4 out of 23) | Count           | 16                | 16                | 16                | 14              | 16                | 16                | 13              |
| <b>Conservation Strategy and Landscape Connectivity</b>   |                 |                   |                   |                   |                 |                   |                   |                 |
| Landscape connectivity: Number of critical pinch-points with negative effects   | Count           | 0                 | 1                 | 1                 | 3               | 1                 | 1                 | 4               |
| Abundance and distribution of high quality old-growth forest blocks in OGRs and other Non-development LUDs after 100+ years   | Qualitative     | Good to Excellent | Good to Excellent | Good to Very Good | Poor to Good    | Good to Very Good | Good to Very Good | Poor            |
| <b>Species-Specific Effects</b>   |                 |                   |                   |                   |                 |                   |                   |                 |
| Goshawks – Likelihood of maintaining viable, well-distributed populations after 100+ years  | Rating          | Very High         | Very High         | Very High         | Moderately High | High              | High              | Moderate        |
| Marten – Likelihood of maintaining viable, well-distributed populations after 100+ years  | Rating          | Very High         | High              | High              | Moderate        | Moderate          | Moderate          | Moderate        |
| Wolf – Likelihood of maintaining viable, well-distributed populations after 100+ years  | Rating          | Very High         | Very High         | High              | High            | High              | High              | Moderately High |
| Brown Bear – Likelihood of maintaining viable, well-distributed populations after 100+ years  | Rating          | Very High         | High              | High              | Moderately High | High              | High              | Moderately High |
| Endemic Mammals – Likelihood of maintaining viable, well-distributed populations for all endemics after 100+ years  | Rating          | Moderate          | Moderate          | Moderate          | Moderately Low  | Moderate          | Moderate          | Very Low        |
| Deer habitat capability on NFS Lands after 100+ years in Terms of Percent of Original (1954) Habitat Capability (88% currently)   | Percent         | 86                | 84                | 83                | 79              | 81                | 82                | 77              |
| * 21 Biogeographic Provinces inside the Forest Boundary plus 2 outside (Chilkat River Complex and Glacier Bay/Fairweather Range)  |                 |                   |                   |                   |                 |                   |                   |                 |

Alternative 3 would have two biogeographic provinces and Alternatives 5 and 6 would have three provinces with less than 50 percent their acreage in non-development LUDs. The lowest percentage would be for the Etohin Island and Vicinity province with 43 percent under Alternative 3 and for the Kupreanof/Mitkof Island province with 36 percent under Alternative 5 and 39 percent under Alternative 6. Alternative 3 would have 9 of the 21 provinces and Alternative 5 and 6 would have 6 of the 21 provinces with 90 percent or more of their acreage in non-development LUDs.

Alternatives 4 and 7 would each result in five biogeographic provinces with less than 50 percent in non-development LUDs. The lowest percentage would be for the Etohin Island and Vicinity province with 20 percent under Alternative 4 and for the Kupreanof/Mitkof Island province with 18 percent under Alternative 7. Alternatives 4 and 7 would have 6 of the 21 provinces containing 90 percent or more of their acreage in non-development LUDs.

### **Key Issue 2 – The Tongass National Forest needs to provide a sufficient timber supply to meet the market demand and help maintain a vibrant economy in Southeast Alaska.**

Timber from the Tongass National Forest is the main source of raw materials for the region's wood products industry.

Demand may be thought of as the different amounts of a product buyers are willing to purchase at different prices. Demand is not a single number, but instead a series of price-quantity relationships. The same is true of supply. It is the combination of supply and demand that determines the quantity and price of goods produced and consumed.

Accurately projecting future demand is difficult. Market demand for Southeast Alaska timber and wood products depends upon numerous difficult to predict factors, including changes in technology, growth and exchange rates in key markets, changes in consumer tastes and preferences, as well as developments in other producing regions whose products compete with those of Alaska.

The average timber sale on the Tongass includes spruce, hemlock, and cedar and results in a variety of log grades and species. In most forested conditions, the tree species, tree sizes and tree quality are all mixed together. When a timber sale is purchased by a sawmill owner, they are usually required to purchase all of the volume in that sale regardless of the composition. At present, none of the purchasers are set up to efficiently process all grade and species from such sales, nor is the local industry set up to process all of the components of the timber sales. In the absence of a facility to use utility and lower grade logs, a timber sale must be sustained solely on the profits made from the higher grade sawlogs, even though the operator must harvest and pay for the lower grade logs.

It should be noted that the Alaska Regional Forester (Region 10) signed a new policy in March 2007 that approved limited interstate shipments of unprocessed Sitka spruce and western hemlock. This policy is expected to increase the utilization of timber harvested on the Tongass and improve overall timber sale economics by providing a market for smaller diameter and low grade material that cannot be processed profitably by sawmills in Southeast Alaska.

The wood products analysis prepared for this EIS is divided into long- and short-term effects. The long-term effects analysis evaluates the alternatives with respect to a) the projections developed by the Pacific Northwest Research Station of the Forest Service, and b) current production levels, installed capacity, and the minimum volumes required by various processing facilities. These benchmarks are

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used to evaluate the long-term effects of the alternatives. Long-term effects are assessed based on the ASQ projected under each alternative.

The short-term effects analysis discusses three key components of the “timber pipeline”: volume under contract, NEPA-cleared volume (i.e., sales that have approved NEPA documents but have not yet been sold), and timber volume in preparation (i.e., proposed sales that are currently being evaluated under the NEPA process).

### Long-Term Effects

**PNW Projections.** The Forest Service commissioned the Pacific Northwest Research Station to determine the maximum amount of timber product volume that could be sold over time (planning cycle market demand) and to develop a series of demand estimates as the industry grew to meet this output level. This resulted in a “derived demand” analysis that projected various demand figures for four scenarios based upon differing assumptions about future markets and future processing facilities in Southeast Alaska (Brackley et al. 2006). These future visions of the Southeast Alaska wood products industry are hypothetical and presented here to illustrate the type of developments that might take place in cases where different volumes are made available for harvest. The transition from one scenario to the next involves new private investment and market development. A key factor in attracting new investment is whether or not a supply of timber “shelf volume” is available for purchase.

Alternatives 1 through 4 were designed to correspond with Scenarios 1 through 4, respectively, while also responding to other concerns. The discrepancy between the second decade ASQs for Alternatives 1 and 2 and projected demand for 2022 under Scenarios 1 and 2 reflects these other concerns. These scenarios are briefly summarized in the following paragraphs, along with the ability of the alternatives to meet each scenario in 2022.

**Scenario 1 – Limited Lumber Production.** This scenario approximates the status of the timber industry in Southeast Alaska at the time that the Brackley et al. study was completed. Total derived demand is projected to be 68 MMBF in 2022 under this scenario. It is likely that this volume would be primarily logs from more economical (NIC I) lands.

Alternative 1, with a projected total output of 49 MMBF, could not provide sufficient volume to meet this scenario as currently modeled.

Alternatives 2, 3, 4, 5, 6, and 7 could all provide sufficient volume to meet this scenario in 2022.

**Scenario 2 – Expanded Lumber Production.** This scenario also projects that only higher value logs are processed, with limited new investments in the existing mills in Southeast Alaska. Total derived demand is projected to be 187 MMBF in 2022 under this scenario. As in Scenario 1, it is likely that this volume would be primarily higher value logs from the more economical (NIC I) lands.

Alternatives 1 and 2, with projected total outputs of 49 MMBF and 151 MMBF, respectively, could not provide sufficient volume to meet this scenario.

Alternatives 3, 4, 5, 6, and 7 could all provide sufficient volume to meet this scenario.

**Scenario 3 – Medium Integrated Industry.** This scenario builds on Scenario 2 and would establish processing capacity to fully utilize sawlogs and low grade and utility

logs from federal and state timber sales. Under this scenario the current sawlog milling capacity would operate efficiently and new processing capacity would be developed to utilize the material that has formerly been left in the woods or exported. Total derived demand is projected to be 204 MMBF in 2022 under this scenario.

Alternatives 1 and 2 with projected total outputs of 49 MMBF and 151 MMBF, respectively, could not provide sufficient volume to meet this scenario.

Alternatives 3, 4, 5, 6, and 7 could provide sufficient volume to meet this scenario.

**Scenario 4 – High Integrated Industry.** This scenario builds on Scenario 3 and provides an estimate of the upper market level for the foreseeable future. In order for this situation to be realized, new investments in processing capacity would need to be made and additional market shares established. Total derived demand is projected to be 342 MMBF in 2022 under this scenario.

Alternatives 1, 2, 3, 5 and 6 with projected total outputs of 49 MMBF, 151 MMBF, 205 MMBF, 267 MMBF, and 267 MMBF respectively, could not provide sufficient volume to meet this scenario.

Alternatives 4 and 7 could provide sufficient volume to meet this scenario.

The ability of the seven alternatives to supply enough timber to satisfy the projected demand for timber under each scenario is summarized in Table S-1.

**Current Production Levels, Installed Capacity, and Minimum Volumes Required by Various Processing Facilities.** The existing mills in Southeast Alaska had an estimated active installed processing capacity of 261 MMBF in 2006 and a total processing capacity of 361 MMBF. The estimated NIC I components of the harvest volumes projected under each alternative range from 9 percent of the active installed processing capacity under Alternative 1 to 71 percent under Alternative 7. The NIC I volume projected under Alternative 5 (No Action) represents about 46 percent of the existing active processing capacity. The projected NIC I components represent smaller shares of the total installed capacity, ranging from 7 percent under Alternative 1 to 51 percent under Alternative 7.

Two of the future demand scenarios evaluated by Brackley et al. (2006a) involve an integrated industry. These scenarios are based on the assumption that as stable volumes get higher, the industry will develop in an integrated fashion, with operations and production that utilize materials that are inefficient or excess to one another's production. The potential components of an integrated industry could include sawmills, a veneer plant, and a medium density fiberboard (MDF) or bioenergy facility, among others. The different facilities would process different types of log. Sawmills would generally process higher quality material (high grade sawlogs), with the other types of facility processing lower quality material (low grade sawlogs and utility logs).

Based on the projected harvest volumes, only Alternatives 4 and 7 would provide sufficient volume to support an integrated industry that consisted of the existing sawmills, a veneer plant, and an MDF or Bioenergy facility. Under Alternative 5 (No Action), there would be sufficient volume to support the existing sawmills. There would also be sufficient volume to support one or more veneer plants or an MDF or other chip-related operation, but not both.

A number of timber projections were reviewed as part of this analysis. Based on this review, the Forest Service identified a potential upper planning cycle demand of

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360 MMBF from all sources. Only Alternative 7 includes sufficient volume to meet this level of demand only from NFS acres.

**Direct Employment and Income.** Direct sawmill and logging employment estimates are presented in job-years, which represent the equivalent of one year's employment. This potential employment would not necessarily occur all in one year and estimated job totals do not directly translate into estimated numbers of affected workers. These estimates assume a linear relationship between harvest and employment levels, with a one percent change in harvest resulting in a one percent change in employment. In reality, changes in volume will have a lagged response in employment, but the assumed linear relationship is an approximation that can be used to compare alternatives.

Based on projected harvest volumes, average annual direct wood products employment would range from 494 annualized jobs under Alternative 1 to 1,922 jobs under Alternative 7. Approximately 274 of these annualized jobs would be associated with non-Tongass harvest under each alternative. Viewed in relation to Alternative 5 (No Action), projected direct employment would range from a 63 percent decrease under Alternative 1 to an increase of approximately 43 percent under Alternative 7.

Projected annual direct income, which is calculated based on the projected number of jobs, would range from \$19.5 million under Alternative 1 to \$72.5 million under Alternative 7. These totals also include income that would be generated by non-Tongass harvest.

### Short-Term Effects

The following discussion provides an indication of potential short-term effects. Actual effects would depend on the volumes in each pool when the decision is implemented. In the case of the volume under contract, potential impacts would also depend on whether potentially affected sales were cancelled or exempted as part of the decision.

**Volume under Contract.** Alternative 1 would maintain the majority of the Inventoried Roadless Areas on the Tongass in a natural condition and would not allow timber harvest in those areas. Alternative 1 would affect 52 percent (54 MMBF) of the volume under contract as of August 2006 (104 MMBF). The volume currently under contract would not be affected by any of the other alternatives.

**NEPA-Cleared Volume.** Alternative 1 would affect 56 percent (255 MMBF) of the current NEPA-cleared volume as of August 2006 (454 MMBF). It should be noted that not all this volume is considered economic under current market conditions. Alternative 2 would affect 44 percent or 198 MMBF of this volume, which represents the volume that has passed through the NEPA process and is scheduled to be available for sale in the near future. None of the other alternatives would affect this volume.

**Timber Volume in Preparation.** Alternative 1 would affect 56 percent (298 MMBF) of the timber volume in preparation as of September 2006 (536 MMBF). Alternatives 2 and 3 would each affect approximately 7 percent or 40 MMBF of this volume. Alternatives 4, 5, 6, and 7 would not affect this volume.

### **Key Issue 3 – Protection of the wildlife habitat and biodiversity of the Tongass National Forest is of local and national significance and is affected by road development and timber harvest activities.**

The Tongass National Forest supports a unique and important assemblage of wildlife including the largest population of brown bears and breeding bald eagles in the world, species of high importance for subsistence (e.g., Sitka black-tailed deer), an extensive array of endemic mammals and other species, and a large number of species that are at least partially dependent on old-growth habitats (e.g., marten and goshawk). Populations of many of these species and the biodiversity of Southeast Alaska are affected by timber harvest and the development of roads.

#### **Old-Growth Harvest**

The amount of harvest of POG is a key indicator of effects on many species, including goshawks, marten, endemic mammals, and deer (to some degree). The range of old-growth harvest is broad among the alternatives. Alternative 1 has the lowest maximum harvest of POG at 86,000 acres, while Alternative 7 has the highest maximum at 807,000 acres. After 100 years or so, a minimum of 90 percent of all POG on NFS lands would remain under Alternative 1 and 77 percent would remain under Alternative 7. Percentages for all of Southeast Alaska, including non-NFS lands, would be 82 percent for Alternative 1 and 71 percent for Alternative 7. The other five alternatives would rank between Alternatives 1 and 7; their order from lowest to highest harvest would have Alternative 2 at the low end progressing to Alternative 3, then 6, then 5, and then 4.

#### **Road Development**

The Tongass currently has 4,941 miles of existing roads (including closed and non-system roads). This total includes 2,619 miles of open roads, plus 913 miles of closed roads that are in storage and 1,409 miles of non-system roads. Road construction can negatively affect wildlife by eliminating habitats and by permitting increased access, which can result in increased harvests and human-large predator interactions.

Under Alternative 1, an estimated maximum of 774 new road miles would be developed over 100 years. For Alternatives 2 and 3 the estimated maximum new road construction would be 2,079 and 2,799 miles, respectively. The majority of these road miles would be closed after harvest activities are completed, and reopened at the next entry. The maximum road miles to be constructed under Alternatives 5 and 6 would be 3,874 and 3,744, respectively. Alternative 4 would construct a maximum of 4,890 miles of new road and Alternative 7 would construct a maximum of 5,825 miles of new road.

A better indicator of road effects on wildlife is the road density within Wildlife Analysis Areas (WAA). On Tongass NFS lands, 8 percent of the WAAs that make up the Tongass have a road density greater than 1.0 mile per square mile under existing conditions. Road density would increase in many areas after full implementation of the alternatives. Under Alternative 1, the density would increase so that a maximum of 11 percent of the WAAs would have a density greater than 1.0 mile per square mile. Alternatives 2, 3, and 6 would have a maximum of 16 to 18 percent, Alternative 5 would have a maximum of 19 percent, and Alternatives 4 and 7 would have 23 to 25 percent. These percentages would increase further when cumulative road development, including future road development on non-NFS lands, is considered. The percentage of WAAs with road density on all lands (including non-NFS lands) greater than 1.0 mile per square mile would be 20 percent for

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Alternative 1, 23 to 26 percent for Alternatives 2, 3, 5, and 6, and 28 to 31 percent for Alternatives 4 and 7.

### Representation of Old-Growth Forests

The percentage of POG remaining in each biogeographic province and in each ecological subsection is an indication of the degree to which all potentially valuable ecological communities remain fully represented.

After 100 years of Alternative 1 implementation, 19 of the 23 biogeographic provinces covering Southeast Alaska would have 75 percent or more of their POG remaining and none would have less than 50 percent (minimum value = 55 percent). For large-tree POG, 16 out of 23 provinces would have at least 50 percent of the original amount remaining (minimum value = 32%).

At the other end of the spectrum, after 100 years of implementation of Alternatives 4 or 7, 11 to 12 of the 23 biogeographic provinces would have 75 percent or more of their POG remaining and one would have less than 50 percent (minimum value = 44 percent for Alternative 7). Considering large-tree POG, 13 to 14 of the provinces would have at least 50 percent of the original amount remaining (minimum value = 29 percent under Alternative 7).

The other four alternatives (Alternatives 2, 3, 5, and 6) would all have values within these ranges; they would have 13 to 18 of the 23 biogeographic provinces covering Southeast Alaska with 75 percent or more of their POG remaining. None of these alternatives would have any biogeographic provinces with less than 50 percent of their POG. Each of them would also have 16 out of 23 provinces with least 50 percent of the original large-tree POG remaining (minimum value = 31%).

### Conservation Strategy and Landscape Connectivity

An adequate amount and distribution of high quality old-growth blocks with good landscape connectivity is fundamental to the “coarse filter” aspect of the Old-Growth Forest Conservation Strategy and is important for the maintenance of viable, well-distributed populations of many species of wildlife. Because of the spacing of old-growth reserves and other non-development LUDs, Alternatives 1 and 2 would result in a good to excellent distribution of high quality old-growth blocks over the long term, and would have little to no effects on landscape “pinch-points.” Alternatives 3, 5, and 6 would have good to very good spacing of old-growth reserves and other non-development LUDs and would similarly effect only one “pinch-point.”

Under Alternative 4, the long-term result would be a good distribution of high quality old-growth blocks in the four biogeographic provinces with old-growth reserves, but a poor to fair distribution in the other provinces over the long term. The old-growth retention requirement would mitigate this to some degree, but would not necessarily result in blocks or large patches of POG being retained. This alternative would also negatively affect three critical landscape “pinch-points.”

Alternative 7 would result in a poor distribution of high quality old-growth blocks over the long term throughout most of the Tongass because of the lack of old-growth reserves, the lack of an old-growth retention requirement, and the high acreage of development LUDs. It would negatively affect four critical landscape “pinch-points” and result in a lower degree of landscape connectivity due to narrower beach buffers.

### Species-Specific Effects

Expert panel viability assessments were conducted for key species to rate the alternatives considered in the 1997 Forest Plan Revision EIS. These ratings were transferred to the alternatives in this EIS, based on the four alternatives that are similar between EISs (i.e., 1997-Alternative 6 is similar to 2007-Alternative 4, 1997-Alternative 11 is similar to 2007-Alternatives 5 and 6, and 1997-Alternative 2 is similar to 2007-Alternative 7), and based on harvest acreage similarities. The ratings were also transferred into a relative qualitative description of the likelihood of maintaining viable, well-distributed populations so that the alternatives could more easily be compared.

Under Alternative 1, the likelihood of maintaining viable, well-distributed populations on the Tongass after 100 years is estimated to be very high for the goshawk, marten, wolf, and brown bear, and moderate for endemic mammals. Alternative 2 would rate almost as high. Under Alternative 3, this likelihood is estimated to be very high for the goshawk; high for the marten, wolf, and brown bear; and moderate for endemic mammals.

Alternatives 5 and 6 would have similar ratings. The likelihood of maintaining viable, well-distributed populations on the Tongass after 100 years is estimated to be high for the goshawk, wolf and brown bear; and moderate for the marten and endemic mammals.

Alternatives 4 and 7 rate the lowest among the alternatives. For Alternative 4, the likelihood of maintaining viable, well distributed populations on the Tongass after 100 years is estimated to be high for the wolf; moderately high for the goshawk and brown bear; moderate for the marten; and moderately low for endemic mammals. For Alternative 7, the likelihood is estimated to be moderately high for the wolf and brown bear; moderate for the goshawk and marten; and very low for endemic mammals.

Deer habitat capability expressed in terms of percent of 1954 values can be used to identify the amount of habitat change over time (current habitat capability = 88 percent of 1954 value, based on the deer model). After 100 years of Forest Plan implementation, the percentage for Alternative 1 could drop as low as 86 percent, 84 percent under Alternative 2, 83 percent under Alternative 3, 82 percent under Alternative 6, 81 percent under Alternative 5, 79 percent under Alternative 4, and 77 percent under Alternative 7. These percentages could be increased somewhat with more intensive management of young-growth forests.

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**Table 2-20  
Summary of Effects Matrix**

| Value/Resource   | Alternative 1   | Alternative 2  | Alternative 3  | Alternative 4  | Alternative 5  | Alternative 6  | Alternative 7   |
|--|---|--|--|--|--|--|---|
| <b>PHYSICAL AND BIOLOGICAL ENVIRONMENT</b>   |   |  |  |  |  |  |   |
| <b>Karst</b>   |   |  |  |  |  |  |   |
| <b>Karst Resources:</b> Forest Plan S&Gs fully protect high vulnerability karst lands and other karst areas also have S&Gs for protection. However, some effects may occur as a result of timber harvest and road construction. The relative effects on karst resources are proportional to the amount of karst lands in the mapped suitable forest land base.       | Maximum harvest after 100+ years on karst lands is 12,000 acres of old growth and 17,000 acres of young growth. Implementation of S&Gs and site-specific mitigation measures will mitigate potential effects.   | Maximum harvest after 100+ years on karst lands is 18,000 acres of old growth and 43,000 acres of young growth. Implementation of S&Gs and site-specific mitigation measures will mitigate potential effects.  | Maximum harvest after 100+ years on karst lands is 20,000 acres of old growth and 46,000 acres of young growth. Implementation of S&Gs and site-specific mitigation measures will mitigate potential effects.  | Maximum harvest after 100+ years on karst lands is 33,000 acres of old growth and 53,000 acres of young growth. Implementation of S&Gs and site-specific mitigation measures will mitigate potential effects.  | Maximum harvest after 100+ years on karst lands is 25,000 acres of old growth and 52,000 acres of young growth. Implementation of S&Gs and site-specific mitigation measures will mitigate potential effects.  | Maximum harvest after 100+ years on karst lands is 23,000 acres of old growth and 50,000 acres of young growth. Implementation of S&Gs and site-specific mitigation measures will mitigate potential effects.  | Maximum harvest after 100+ years on karst lands is 44,000 acres of old growth and 59,000 acres of young growth. Implementation of S&Gs and site-specific mitigation measures will mitigate potential effects.   |
| <b>Soils</b>   |   |  |  |  |  |  |   |
| <b>Soil Productivity, Erosion, and Mass Wasting:</b> Changes in soil productivity are proportional to the extent of road development, with road development removing land from productive status. Soil erosion and mass wasting potential is also proportional to the extent of road development, as well as the amount of harvest on steep slopes.                  | Cumulative acres covered by road surfaces on NFS lands are estimated to increase by a maximum of 2,300 after 100 yrs. Amount of additional harvest on slopes ≥ 67% would be a maximum of 2,400 acres after 100 yrs.   | Cumulative acres covered by road surfaces on NFS lands are estimated to increase by a maximum of 6,200 after 100 yrs. Amount of additional harvest on slopes ≥ 67% would be a maximum of 8,200 acres after 100 yrs.  | Cumulative acres covered by road surfaces on NFS lands are estimated to increase by a maximum of 8,400 after 100 yrs. Amount of additional harvest on slopes ≥ 67% would be a maximum of 12,400 acres after 100 yrs.   | Cumulative acres covered by road surfaces on NFS lands are estimated to increase by a maximum of 14,700 after 100 yrs. Amount of additional harvest on slopes ≥ 67% would be a maximum of 21,600 acres after 100 yrs.  | Cumulative acres covered by road surfaces on NFS lands are estimated to increase by a maximum of 11,600 after 100 yrs. Amount of additional harvest on slopes ≥ 67% would be a maximum of 17,400 acres after 100 yrs.  | Cumulative acres covered by road surfaces on NFS lands are estimated to increase by a maximum of 11,200 after 100 yrs. Amount of additional harvest on slopes ≥ 67% would be a maximum of 16,600 acres after 100 yrs.  | Cumulative acres covered by road surfaces on NFS lands are estimated to increase by a maximum of 17,500 after 100 yrs. Amount of additional harvest on slopes ≥ 67% would be a maximum of 30,000 acres after 100 yrs.   |
| <b>Water and Wetlands</b>  |   |  |  |  |  |  |   |
| <b>Stream Flows:</b> Effects on stream flows are expected to vary by watershed and are difficult to predict, but are expected to be small. Any effects that do occur are expected to be proportional to the extent of road development and harvest.  | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.  | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.  |
| <b>Wetlands:</b> Effects of timber harvest and road construction are proportional to the extent of road development and harvest.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.  | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.   | See cumulative acres covered by road surfaces under Soils, road development under Fish, and old-growth forest harvest under Biodiversity and Plants.  |
| <b>Public Water Supplies:</b> The supply and quality of water produced by municipal watersheds.  | No change in municipal watershed LUD.   | No change in municipal watershed LUD.  | No change in municipal watershed LUD.  | No change in municipal watershed LUD.  | No change in municipal watershed LUD.  | No change in municipal watershed LUD.  | No change in municipal watershed LUD.   |
| <b>Fish</b>  |   |  |  |  |  |  |   |
| <b>Fish Passage:</b> Effects of road-stream crossings on fish passage are proportional to the length of roads constructed. However, Forest Plan S&Gs and monitoring are expected to reduce this impact to low levels for all alternatives over the long term.  | Cumulative road development on NFS lands is expected to increase by a maximum of 774 miles after 100 yrs. This represents a 16% increase over existing conditions.  | Cumulative road development on NFS lands is expected to increase by a maximum of 2,079 miles after 100 yrs. This represents a 42% increase over existing conditions.   | Cumulative road development on NFS lands is expected to increase by a maximum of 2,799 miles after 100 yrs. This represents a 57% increase over existing conditions.   | Cumulative road development on NFS lands is expected to increase by a maximum of 4,890 miles after 100 yrs. This represents a 99% increase over existing conditions.   | Cumulative road development on NFS lands is expected to increase by a maximum of 3,874 miles after 100 yrs. This represents a 78% increase over existing conditions.   | Cumulative road development on NFS lands is expected to increase by a maximum of 3,744 miles after 100 yrs. This represents a 76% increase over existing conditions.   | Cumulative road development on NFS lands is expected to increase by a maximum of 5,825 miles after 100 yrs. This represents a 118% increase over existing conditions.   |
| <b>Fish Habitat:</b> Effects on fish habitat can be measured by the amount of road development, road density, and timber harvest activity. However, Forest Plan S&Gs associated with riparian areas, wetlands, beach and estuary fringe, etc., are expected to reduce these effects to nonsignificant levels.  | After 100 yrs, average road density would be a maximum of 0.22 mi/sq mi with 96% of VCUUs having a density < 2 mi/sq mi. on NFS lands. Cumulative average road density on NFS and non-NFS lands combined would be a maximum of 0.42 mi/sq mi with 90% of VCUUs having a density < 2 mi/sq mi. Also see road development under Fish Passage and harvest acres under Biodiversity.  | After 100 yrs, average road density would be a maximum of 0.27 mi/sq mi with 94% of VCUUs having a density < 2 mi/sq mi. on NFS lands. Cumulative average road density on NFS and non-NFS lands combined would be a maximum of 0.47 mi/sq mi with 88% of VCUUs having a density < 2 mi/sq mi. Also see road development under Fish Passage and harvest acres under Biodiversity.       | After 100 yrs, average road density would be a maximum of 0.30 mi/sq mi with 93% of VCUUs having a density < 2 mi/sq mi. on NFS lands. Cumulative average road density on NFS and non-NFS lands combined would be a maximum of 0.49 mi/sq mi with 88% of VCUUs having a density < 2 mi/sq mi. Also see road development under Fish Passage and harvest acres under Biodiversity.       | After 100 yrs, average road density would be a maximum of 0.38 mi/sq mi with 92% of VCUUs having a density < 2 mi/sq mi. on NFS lands. Cumulative average road density on NFS and non-NFS lands combined would be a maximum of 0.57 mi/sq mi with 86% of VCUUs having a density < 2 mi/sq mi. Also see road development under Fish Passage and harvest acres under Biodiversity. | After 100 yrs, average road density would be a maximum of 0.34 mi/sq mi with 92% of VCUUs having a density < 2 mi/sq mi. on NFS lands. Cumulative average road density on NFS and non-NFS lands combined would be a maximum of 0.53 mi/sq mi with 87% of VCUUs having a density < 2 mi/sq mi. Also see road development under Fish Passage and harvest acres under Biodiversity. | After 100 yrs, average road density would be a maximum of 0.33 mi/sq mi with 93% of VCUUs having a density < 2 mi/sq mi. on NFS lands. Cumulative average road density on NFS and non-NFS lands combined would be a maximum of 0.52 mi/sq mi with 87% of VCUUs having a density < 2 mi/sq mi. Also see road development under Fish Passage and harvest acres under Biodiversity. | After 100 yrs, average road density would be a maximum of 0.41 mi/sq mi with 90% of VCUUs having a density < 2 mi/sq mi. on NFS lands. Cumulative average road density on NFS and non-NFS lands combined would be a maximum of 0.60 mi/sq mi with 84% of VCUUs having a density < 2 mi/sq mi. Also see road development under Fish Passage and harvest acres under Biodiversity.                      |
| <b>Biodiversity and Plants</b>   |   |  |  |  |  |  |   |
| <b>Old-Growth Forest Harvest:</b> Because of the importance of old-growth forests to the biodiversity of Southeast Alaska and because it is the habitat that is affected the most on both NFS and non-NFS lands, a measure of effects on biodiversity and plants is the maximum amount of productive old growth (POG) harvest.                                       | A maximum of 86,000 acres of POG would be harvested on NFS lands after 100 yrs. Assuming all of these acres were harvested, approximately 90% of original POG on NFS lands and 82% of original POG on all lands in SE Alaska would remain (past and future harvest on non-NFS lands is included).   | A maximum of 215,000 acres of POG would be harvested on NFS lands after 100 yrs. Assuming all of these acres were harvested, approximately 88% of original POG on NFS lands and 80% of original POG on all lands in SE Alaska would remain (past and future harvest on non-NFS lands is included).   | A maximum of 313,000 acres of POG would be harvested on NFS lands after 100 yrs. Assuming all of these acres were harvested, approximately 86% of original POG on NFS lands and 78% of original POG on all lands in SE Alaska would remain (past and future harvest on non-NFS lands is included).   | A maximum of 656,000 acres of POG would be harvested on NFS lands after 100 yrs. Assuming all of these acres were harvested, approximately 79% of original POG on NFS lands and 73% of original POG on all lands in SE Alaska would remain (past and future harvest on non-NFS lands is included).   | A maximum of 463,000 acres of POG would be harvested on NFS lands after 100 yrs. Assuming all of these acres were harvested, approximately 83% of original POG on NFS lands and 76% of original POG on all lands in SE Alaska would remain (past and future harvest on non-NFS lands is included).   | A maximum of 445,000 acres of POG would be harvested on NFS lands after 100 yrs. Assuming all of these acres were harvested, approximately 83% of original POG on NFS lands and 76% of original POG on all lands in SE Alaska would remain (past and future harvest on non-NFS lands is included).   | A maximum of 807,000 acres of POG would be harvested on NFS lands after 100 yrs. Assuming all of these acres were harvested, approximately 77% of original POG on NFS lands and 71% of original POG on all lands in SE Alaska would remain (past and future harvest on non-NFS lands is included).  |
| <b>Old-Growth Distribution and Representation:</b> The percentage of POG and large-tree POG remaining in each biogeographic province for all of Southeast Alaska (including non-NFS lands) is an indication of the degree to which all potentially valuable ecological communities remain fully represented.   | After 100 yrs, 19 of the 23 biogeographic provinces would have 75% or more of their POG remaining and none would have less than 50% (minimum value = 55%). For large-tree POG, 16 of the 23 would have at least 50% remaining and none would have less than 30% (minimum value = 32%).  | After 100 yrs, 18 of the 23 biogeographic provinces would have 75% or more of their POG remaining and none would have less than 50% (minimum value = 54%). For large-tree POG, 16 of the 23 would have at least 50% remaining and none would have less than 30% (minimum value = 32%).   | After 100 yrs, 16 of the 23 biogeographic provinces would have 75% or more of their POG remaining and none would have less than 50% (minimum value = 52%). For large-tree POG, 16 of the 23 would have at least 50% remaining and none would have less than 30% (minimum value = 32%).   | After 100 yrs, 12 of the 23 biogeographic provinces would have 75% or more of their POG remaining and 1 would have less than 50% (minimum value = 49%). For large-tree POG, 14 of the 23 would have at least 50% remaining and none would have less than 30% (minimum value = 31%).  | After 100 yrs, 13 of the 23 biogeographic provinces would have 75% or more of their POG remaining and none would have less than 50% (minimum value = 51%). For large-tree POG, 16 of the 23 would have at least 50% remaining and none would have less than 30% (minimum value = 31%).   | After 100 yrs, 13 of the 23 biogeographic provinces would have 75% or more of their POG remaining and none would have less than 50% (minimum value = 51%). For large-tree POG, 16 of the 23 would have at least 50% remaining and none would have less than 30% (minimum value = 31%).   | After 100 yrs, 11 of the 23 biogeographic provinces would have 75% or more of their POG remaining and 1 would have less than 50% (minimum value = 44%). For large-tree POG, 13 of the 23 would have at least 50% remaining and 1 would have less than 30% (minimum value = 29%).  |
| <b>Wildlife</b>  |   |  |  |  |  |  |   |
| <b>Conservation Strategy and Landscape Connectivity:</b> An adequate amount and distribution of high quality old-growth blocks with good landscape connectivity is fundamental to the "coarse filter" aspect of the Old-Growth Forest Conservation Strategy and is important for the maintenance of viable, well-distributed populations of many species of wildlife | This alternative would result in a good to excellent distribution of high quality old-growth blocks over the long term, and would not have a major effect on landscape "pinch-points." In addition to more non-development LUDs, it would improve the protection of high quality old growth due to refinements in small old-growth reserve boundaries, relative to Alternative 5. | This alternative would result in a good to excellent distribution of high quality old-growth blocks over the long term, and would have some effect on one critical landscape "pinch-point." In addition to more non-development LUDs, it would improve the protection of high quality old growth due to refinements in small old-growth reserve boundaries, relative to Alternative 5. | This alternative would result in a good to very good distribution of high quality old-growth blocks over the long term, and would have some effect on one critical landscape "pinch-point." In addition to more non-development LUDs, it would improve the protection of high quality old growth due to refinements in small old-growth reserve boundaries, relative to Alternative 5. | This alternative would result in a good to very good distribution of high quality old-growth blocks in the four biogeographic provinces with old-growth reserves, but a poor to fair distribution in the other provinces over the long term. It would negatively affect three critical landscape "pinch-points."   | This alternative would result in a good to very good distribution of high quality old-growth blocks over the long term, and would have some effect on one critical landscape "pinch-point" on Prince of Wales Island.  | This alternative would result in a good to very good distribution of high quality old-growth blocks over the long term, with improvements over Alternative 5 due to refinements in the small old-growth reserve boundaries. It would have some effect on one critical landscape "pinch-point" on Prince of Wales Island.   | This alternative would result in a poor distribution of high quality old-growth blocks over the long term because of the lack of old-growth reserves, the lack of an old-growth retention requirement, and the high acreage of development LUDs. It would negatively affect 4 critical landscape "pinch-points" and result in a lower degree of landscape connectivity due to narrower beach buffers. |
| <b>Key Species Distribution and Viability:</b> Expert panel viability assessments were made for key species to rate the alternatives considered in the 1997 Forest Plan Revision EIS. These ratings can be transferred to the alternatives in this EIS, based on the four alternatives that are similar between EISs and harvest acreage similarities.               | The likelihood of maintaining viable, well distributed populations on the Tongass after 100 years is estimated to be very high for the goshawk, marten, wolf, and brown bear, and moderate for endemic mammals.   | The likelihood of maintaining viable, well distributed populations on the Tongass after 100 years is estimated to be very high for the goshawk and wolf; high for the marten and brown bear; and moderate for endemic mammals.   | The likelihood of maintaining viable, well distributed populations on the Tongass after 100 years is estimated to be very high for the goshawk; high for the marten, wolf, and brown bear; and moderate for endemic mammals.   | The likelihood of maintaining viable, well distributed populations on the Tongass after 100 years is estimated to be high for the wolf; moderately high for the goshawk and brown bear; moderate for the marten; and moderately low for endemic mammals.   | The likelihood of maintaining viable, well distributed populations on the Tongass after 100 years is estimated to be high for the goshawk, wolf, and brown bear; and moderate for the marten and endemic mammals.  | The likelihood of maintaining viable, well distributed populations on the Tongass after 100 years is estimated to be high for the goshawk, wolf, and brown bear; and moderate for the marten and endemic mammals.  | The likelihood of maintaining viable, well distributed populations on the Tongass after 100 years is estimated to be moderately high for the wolf and brown bear; moderate for the goshawk and marten; and very low for endemic mammals.  |
| <b>Deer Habitat:</b> Deer habitat capability expressed in terms of percent of 1954 values can be used to identify the amount of habitat change over time (current habitat capability = 88% of 1954 value, based on the deer model).  | After 100 years, deer habitat capability would be a minimum of 86% of 1954 value on NFS lands. This value has the potential to be increased with young-growth management.   | After 100 years, deer habitat capability would be a minimum of 84% of 1954 value on NFS lands. This value has the potential to be increased with young-growth management.  | After 100 years, deer habitat capability would be a minimum of 83% of 1954 value on NFS lands. This value has the potential to be increased with young-growth management.  | After 100 years, deer habitat capability would be a minimum of 79% of 1954 value on NFS lands. This value has the potential to be increased with young-growth management.  | After 100 years, deer habitat capability would be a minimum of 81% of 1954 value on NFS lands. This value has the potential to be increased with young-growth management.  | After 100 years, deer habitat capability would be a minimum of 82% of 1954 value on NFS lands. This value has the potential to be increased with young-growth management.  | After 100 years, deer habitat capability would be a minimum of 77% of 1954 value on NFS lands. This value has the potential to be increased with young-growth management.   |

**Table 2-20 (continued)**  
**Summary of Effects Matrix**

| Value/Resource   | Alternative 1  | Alternative 2  | Alternative 3  | Alternative 4  | Alternative 5   | Alternative 6  | Alternative 7  |
|--|--|--|--|--|---|--|--|
| <b>HUMAN USES AND LAND MANAGEMENT</b>  |  |  |  |  |   |  |  |
| <b>Lands and Other Special Land Use Designations</b>   |  |  |  |  |   |  |  |
| <b>Lands:</b> No significant environmental consequences from NFS land ownership administration activities under any alternatives. No land ownership adjustments are proposed under any alternatives. Potential changes to areas designated as Experimental Forest and Special Interest Area. No changes to Research Natural Areas; Wild, Scenic, or Recreational Rivers; or Municipal Watershed LUDs.                      | Forest Service would conduct land administration under the proposed Forest-wide standards and guidelines, which reflect minimal changes from the current (1997) Forest Plan. Recommended replacement of Young Bay Experimental Forest. Proposed designation of 23 new Special Interest Areas, with net increase of 47,000 acres. | Forest Service would conduct land administration under the proposed Forest-wide standards and guidelines, which reflect minimal changes from the current (1997) Forest Plan. Recommended replacement of Young Bay Experimental Forest. Proposed designation of 23 new Special Interest Areas, with net increase of 47,000 acres. | Forest Service would conduct land administration under the proposed Forest-wide standards and guidelines, which reflect minimal changes from the current (1997) Forest Plan. Recommended replacement of Young Bay Experimental Forest. Proposed designation of 23 new Special Interest Areas, with net increase of 47,000 acres. | Forest Service would conduct land administration under the proposed Forest-wide standards and guidelines, which reflect minimal changes from the current (1997) Forest Plan. Recommended replacement of Young Bay Experimental Forest. Proposed designation of 23 new Special Interest Areas, with net increase of 47,000 acres. | Lands would continue to be managed in accordance with the 1997 Forest Plan standards and guidelines under this alternative.   | Forest Service would conduct land administration under the proposed Forest-wide standards and guidelines, which reflect minimal changes from the current (1997) Forest Plan. Recommended replacement of Young Bay Experimental Forest. Proposed designation of 23 new Special Interest Areas, with net increase of 47,000 acres. | Forest Service would conduct land administration under the proposed Forest-wide standards and guidelines, which reflect minimal changes from the current (1997) Forest Plan. Recommended replacement of Young Bay Experimental Forest. Proposed designation of 23 new Special Interest Areas, with net increase of 47,000 acres. |
| <b>Transportation and Utilities</b>  |  |  |  |  |   |  |  |
| <b>National Forest Transportation System Roads:</b> The level of projected timber harvest would affect the road system needed to manage the timber land base.  | A maximum of 774 miles would be constructed over 100 yrs, resulting in a cumulative total of 5,716 total miles of open and closed roads at the end of this period.   | A maximum of 2,079 miles would be constructed over 100 yrs, resulting in a cumulative total of 7,021 total miles of open and closed roads at the end of this period.   | A maximum of 2,799 miles would be constructed over 100 yrs, resulting in a cumulative total of 7,741 total miles of open and closed roads at the end of this period.   | A maximum of 4,890 miles would be constructed over 100 yrs, resulting in a cumulative total of 9,832 total miles of open and closed roads at the end of this period.   | A maximum of 3,874 miles would be constructed over 100 yrs, resulting in a cumulative total of 8,816 total miles of open and closed roads at the end of this period.      | A maximum of 3,744 miles would be constructed over 100 yrs, resulting in a cumulative total of 8,686 total miles of open and closed roads at the end of this period.   | A maximum of 5,825 miles would be constructed over 100 yrs, resulting in a cumulative total of 10,767 total miles of open and closed roads at the end of this period.  |
| <b>Southeast Alaska Transportation Plan (SATP):</b> The Forest Service signed a Memorandum of Understanding (MOU) with the State of Alaska in 2006 to provide rights-of-way for the road corridors covered by Public Law 109-59. The MOU also grants easements to the Forest Service for marine access points and LTFs listed on Map 92337.  | There would be no effect on the SATP under this alternative.   | There would be no effect on the SATP under this alternative.   | There would be no effect on the SATP under this alternative.   | There would be no effect on the SATP under this alternative.   | There would be no effect on the SATP under this alternative.  | There would be no effect on the SATP under this alternative.   | There would be no effect on the SATP under this alternative.   |
| <b>Timber</b>  |  |  |  |  |   |  |  |
| <b>Suitable Forest Lands:</b> Forest lands which are biologically capable of producing commercial wood products without irreversibly harming resources, have a reasonable assurance of adequate reforestation, and for which there is management direction that timber production is appropriate.  | 312,000 acres are estimated to be suitable; 144,000 acres of these are scheduled suitable lands.   | 545,000 acres are estimated to be suitable; 394,000 acres of these are scheduled suitable lands.   | 661,000 acres are estimated to be suitable; 514,000 acres of these are scheduled suitable lands.   | 999,000 acres are estimated to be suitable; 892,000 acres of these are scheduled suitable lands.   | 781,000 acres are estimated to be suitable; 687,000 acres of these are scheduled suitable lands.  | 774,000 acres are estimated to be suitable; 663,000 acres of these are scheduled suitable lands.   | 1,174,000 acres are estimated to be suitable; 1,070,000 acres of these are scheduled suitable lands.   |
| <b>Allowable Sale Quantity (ASQ):</b> The ASQ is the maximum quantity of timber that may be scheduled from Suitable Forest lands for a 10-year period expressed as an annual average.  | The ASQ for the 1st decade and after would be slightly over 49 MMBF.   | The ASQ for the 1st decade and after would be 152 MMBF.  | The ASQ for the 1st decade would be 185 MMBF. The ASQ for the 2nd decade and after would be 203 MMBF.  | The ASQ for the 1st decade would be 312 MMBF. The ASQ for the 2nd decade and after would be 342 MMBF.  | The ASQ for the next decade and after would be 267 MMBF.  | The ASQ for the next decade and after would be 267 MMBF.   | The ASQ for the next decade and after would be 421 MMBF.   |
| <b>Non-Interchangeable Component (NIC):</b> NIC I is the portion of the ASQ that may be harvested using existing logging systems.  | NIC I for the 1st and 2nd decades is estimated to be slightly less than 49 MMBF.   | NIC I for the 1st and 2nd decades is estimated to be 144 MMBF.   | NIC I for the 1st and 2nd decades is estimated to be 168 and 186 MMBF, respectively.   | NIC I for the 1st and 2nd decades is estimated to be 270 and 294 MMBF, respectively.   | NIC I for the 1st and 2nd decades is estimated to be 240 and 242 MMBF, respectively.  | NIC I for the 1st and 2nd decades is estimated to be 237 and 236 MMBF, respectively.   | NIC I for the 1st and 2nd decades is estimated to be 365 and 370 MMBF, respectively.   |
| <b>Existing Timber Volume Under Contract:</b> Changing suitable land to non-development LUDs could affect timber sales that have been sold.  | There is potential for a high effect on timber volume under contract; but this is dependent on the decision.   | There would be no effect on the volume under contract under this alternative.  | There would be no effect on the volume under contract under this alternative.  | There would be no effect on the volume under contract under this alternative.  | There would be no effect on the volume under contract under this alternative.   | There would be no effect on the volume under contract under this alternative.  | There would be no effect on the volume under contract under this alternative.  |
| <b>Minerals</b>  |  |  |  |  |   |  |  |
| <b>Mineral Resources:</b> No modification of Forest Service management of mineral activities specific to any alternative. No change in acreage withdrawn from mineral entry, or lands assigned to Minerals LUD. Distribution of other LUD assignments by alternative could affect costs of mineral exploration, development, production or reclamation activities, which could influence level of future mineral activity. | <b>Identified Mineral Tracts:</b><br>Withdrawn: 25%<br>Higher Cost Open Areas: 36%<br><b>Undiscovered Mineral Areas:</b><br>Withdrawn: 35%<br>Higher Cost Open Areas: 57%  | <b>Identified Mineral Tracts:</b><br>Withdrawn: 25%<br>Higher Cost Open Areas: 29%<br><b>Undiscovered Mineral Areas:</b><br>Withdrawn: 35%<br>Higher Cost Open Areas: 51%  | <b>Identified Mineral Tracts:</b><br>Withdrawn: 25%<br>Higher Cost Open Areas: 26%<br><b>Undiscovered Mineral Areas:</b><br>Withdrawn: 35%<br>Higher Cost Open Areas: 45%  | <b>Identified Mineral Tracts:</b><br>Withdrawn: 25%<br>Higher Cost Open Areas: 20%<br><b>Undiscovered Mineral Areas:</b><br>Withdrawn: 35%<br>Higher Cost Open Areas: 35%  | <b>Identified Mineral Tracts:</b><br>Withdrawn: 25%<br>Higher Cost Open Areas: 29%<br><b>Undiscovered Mineral Areas:</b><br>Withdrawn: 35%<br>Higher Cost Open Areas: 41% | <b>Identified Mineral Tracts:</b><br>Withdrawn: 25%<br>Higher Cost Open Areas: 25%<br><b>Undiscovered Mineral Areas:</b><br>Withdrawn: 35%<br>Higher Cost Open Areas: 41%  | <b>Identified Mineral Tracts:</b><br>Withdrawn: 25%<br>Higher Cost Open Areas: 18%<br><b>Undiscovered Mineral Areas:</b><br>Withdrawn: 35%<br>Higher Cost Open Areas: 33%  |
| <b>Recreation and Tourism</b>  |  |  |  |  |   |  |  |
| <b>Recreation Opportunity Spectrum:</b> Current projections suggest that demand currently exceeds supply for Semi-Primitive Motorized settings in inventoried recreation places. The alternatives affect the supply of different recreation settings over time. The percentages shown here are for 150 years after implementation.   | Primitive: 61%<br>Semi-Primitive Non-Motorized: 18%<br>Semi-Primitive Motorized: 8%<br>Roaded Natural: 2%<br>Roaded Modified: 10%  | Primitive: 61%<br>Semi-Primitive Non-Motorized: 16%<br>Semi-Primitive Motorized: 8%<br>Roaded Natural: 2%<br>Roaded Modified: 13%  | Primitive: 59%<br>Semi-Primitive Non-Motorized: 15%<br>Semi-Primitive Motorized: 8%<br>Roaded Natural: 3%<br>Roaded Modified: 16%  | Primitive: 55%<br>Semi-Primitive Non-Motorized: 13%<br>Semi-Primitive Motorized: 7%<br>Roaded Natural: 3%<br>Roaded Modified: 23%  | Primitive: 57%<br>Semi-Primitive Non-Motorized: 14%<br>Semi-Primitive Motorized: 8%<br>Roaded Natural: 3%<br>Roaded Modified: 19%   | Primitive: 57%<br>Semi-Primitive Non-Motorized: 14%<br>Semi-Primitive Motorized: 8%<br>Roaded Natural: 3%<br>Roaded Modified: 18%  | Primitive: 54%<br>Semi-Primitive Non-Motorized: 12%<br>Semi-Primitive Motorized: 7%<br>Roaded Natural: 3%<br>Roaded Modified: 23%  |
| <b>Home Range Recreation Places:</b> Home range recreation places are those inventoried recreation places within an approximate 20-mile radius from one or more communities. The alternatives affect the LUD groups that these places would be managed under. The percentages shown here are percent of total home range recreation place acres by alternative.  | Wilderness: 22%<br>Natural Setting: 67%<br>Moderate Development: 5%<br>Intensive Development: 6%   | Wilderness: 22%<br>Natural Setting: 58%<br>Moderate Development: 9%<br>Intensive Development: 10%  | Wilderness: 22%<br>Natural Setting: 53%<br>Moderate Development: 12%<br>Intensive Development: 13%   | Wilderness: 22%<br>Natural Setting: 37%<br>Moderate Development: 19%<br>Intensive Development: 21%   | Wilderness: 22%<br>Natural Setting: 48%<br>Moderate Development: 14%<br>Intensive Development: 15%  | Wilderness: 22%<br>Natural Setting: 49%<br>Moderate Development: 13%<br>Intensive Development: 15%   | Wilderness: 22%<br>Natural Setting: 33%<br>Moderate Development: 21%<br>Intensive Development: 23%   |
| <b>Recreation Places Important for Tourism:</b> The alternatives affect the LUD groups that recreation places that are important for tourism would be managed under. The percentages shown here are percent of total home range recreation place acres by alternative.   | Wilderness: 46%<br>Natural Setting: 51%<br>Moderate Development: 2%<br>Intensive Development: 1%   | Wilderness: 46%<br>Natural Setting: 47%<br>Moderate Development: 4%<br>Intensive Development: 3%   | Wilderness: 46%<br>Natural Setting: 43%<br>Moderate Development: 5%<br>Intensive Development: 6%   | Wilderness: 46%<br>Natural Setting: 34%<br>Moderate Development: 10%<br>Intensive Development: 10%   | Wilderness: 46%<br>Natural Setting: 40%<br>Moderate Development: 7%<br>Intensive Development: 7%  | Wilderness: 46%<br>Natural Setting: 40%<br>Moderate Development: 6%<br>Intensive Development: 7%   | Wilderness: 46%<br>Natural Setting: 33%<br>Moderate Development: 11%<br>Intensive Development: 10%   |
| <b>Scenery</b>   |  |  |  |  |   |  |  |
| <b>Scenic Integrity Objectives (SIOs):</b> SIOs define the degree to which the natural landscape can be altered. Visual priority routes and use areas were used to identify seen and seldom seen areas and to map the appropriate SIO.   | Visual priority routes and use areas would be protected. Approximately 62% of the Forest would be managed under the High SIO and 4% under Low and Very Low.  | Visual priority routes and use areas would be protected. Approximately 62% of the Forest would be managed under the High SIO and 9% under Low and Very Low.  | Visual priority routes and use areas would be protected. Approximately 61% of the Forest would be managed under the High SIO and 14% under the Low and Very Low.   | Visual priority routes and use areas would be protected. Approximately 56% of the Forest would be managed under the High SIO and 23% under Low and Very Low.   | Visual priority routes and use areas would be protected. Approximately 61% of the Forest would be managed under the High SIO and 18% under Low and Very Low.              | Visual priority routes and use areas would be protected. Approximately 60% of the Forest would be managed under the High SIO and 17% under Low and Very Low.   | Visual priority routes and use areas would be protected. Approximately 54% of the Forest would be managed under the High SIO and 25% under Low and Very Low.   |

**Table 2-20 (continued)  
Summary of Effects Matrix**

| Value/Resource  | Alternative 1   | Alternative 2  | Alternative 3  | Alternative 4  | Alternative 5  | Alternative 6  | Alternative 7  |
|---|---|--|--|--|--|--|--|
| <b>Subsistence</b>  |   |  |  |  |  |  |  |
| <b>Abundance and Distribution:</b> The majority of subsistence resources (fish and marine invertebrates) would not be affected. However, analysis suggests that deer habitat capabilities in portions of the Tongass may not be adequate to sustain current/future harvest levels under any of the alternatives. The possibility of a significant restriction in harvest resulting from changes in abundance and distribution is assessed in relation to Alternative 5 (No Action). | The possibility of a significant restriction would be lower relative to Alternative 5 (No Action) because of a 77% reduction in development LUD acreage under this alternative.   | The possibility of a significant restriction would be lower relative to Alternative 5 (No Action) because of a 46% reduction in development LUD acreage under this alternative.  | The possibility of a significant restriction would be slightly lower relative to Alternative 5 (No Action) because of a 22% reduction in development LUD acreage under this alternative.   | The possibility of a significant restriction would be higher relative to Alternative 5 (No Action) because of a 31% increase in development LUD acreage under this alternative.  | The possibility of a significant restriction, resulting from a change in abundance or distribution, would be the same under this alternative as under Alternative 11 in the 1997 Forest Plan FEIS.   | The possibility of a significant restriction, resulting from a change in abundance or distribution, would be the same under this alternative as under Alternative 11 in the 1997 Forest Plan FEIS.   | The possibility of a significant restriction would be higher relative to Alternative 5 (No Action) because of a 40% increase in development LUD acreage under this alternative.  |
| <b>Competition:</b> The subsistence analysis concluded that there could be a significant possibility of a significant restriction of subsistence use through increased competition. The possibility of a significant restriction in harvest resulting from a change in competition is assessed in relation to Alternative 5 (No Action).  | The possibility of a significant restriction, resulting from a change in competition, would be lower relative to Alternative 5 (No Action) because of a 80% reduction in proposed new road construction under this alternative.   | The possibility of a significant restriction, resulting from a change in competition, would be lower relative to Alternative 5 (No Action) because of a 46% reduction in proposed new road construction under this alternative.              | The possibility of a significant restriction, resulting from a change in competition, would be lower relative to Alternative 5 (No Action) because of a 28% reduction in proposed new road construction under this alternative.              | The possibility of a significant restriction, resulting from a change in competition, would be higher relative to Alternative 5 (No Action) because of a 26% increase in proposed new road construction under this alternative.              | The possibility of a significant restriction, resulting from a change in competition, would be the same under this alternative as under Alternative 11 in the 1997 Forest Plan FEIS.   | The possibility of a significant restriction, resulting from a change in competition, would be slightly less under this alternative as under Alternative 11 in the 1997 Forest Plan FEIS.  | The possibility of a significant restriction, resulting from a change in competition, would be higher relative to Alternative 5 (No Action) because of a 50% increase in proposed new road construction under this alternative.              |
| <b>Heritage Resources and Sacred Sites</b>  |   |  |  |  |  |  |  |
| Heritage Resources and Sacred Sites: Potential for effects on these resources is proportional to the amount of harvest and road construction expected to occur. However, because of inventory and tribal consultation that is required, the risk of effects is relatively low.  | See road development under Fish and old-growth forest harvest under Biodiversity and Plants as measures of the amount of disturbance. However, because of required inventory and tribal consultation, the risk of effects is relatively low.  | See road development under Fish and old-growth forest harvest under Biodiversity and Plants as measures of the amount of disturbance. However, because of required inventory and tribal consultation, the risk of effects is relatively low. | See road development under Fish and old-growth forest harvest under Biodiversity and Plants as measures of the amount of disturbance. However, because of required inventory and tribal consultation, the risk of effects is relatively low. | See road development under Fish and old-growth forest harvest under Biodiversity and Plants as measures of the amount of disturbance. However, because of required inventory and tribal consultation, the risk of effects is relatively low. | See road development under Fish and old-growth forest harvest under Biodiversity and Plants as measures of the amount of disturbance. However, because of required inventory and tribal consultation, the risk of effects is relatively low. | See road development under Fish and old-growth forest harvest under Biodiversity and Plants as measures of the amount of disturbance. However, because of required inventory and tribal consultation, the risk of effects is relatively low. | See road development under Fish and old-growth forest harvest under Biodiversity and Plants as measures of the amount of disturbance. However, because of required inventory and tribal consultation, the risk of effects is relatively low. |
| <b>Roadless Areas</b>   |   |  |  |  |  |  |  |
| <b>Roadless Areas:</b> Roadless areas within moderate and intensive development LUDs would change from roadless to developed status over time.  | No acres (0%) of existing roadless areas would be identified as suitable for harvest. The only acres in development LUDs would be Experimental Forests.   | 0.8 million acres (9%) of the existing roadless areas would be allocated to moderate and intensive development LUDs. Approximately 89,000 acres (0.9%) would be suitable and scheduled for harvest.  | 1.7 million acres (18%) of the existing roadless areas would be allocated to moderate and intensive development LUDs. Approximately 186,000 acres (2.0%) would be suitable and scheduled for harvest.  | 3.4 million acres (36%) of the existing roadless areas would be allocated to moderate and intensive development LUDs. Approximately 498,000 acres (5.2%) would be suitable and scheduled for harvest.  | 2.4 million acres (26%) of the existing roadless areas would be allocated to moderate and intensive development LUDs. Approximately 316,000 acres (3.3%) would be suitable for harvest.  | 2.3 million acres (24%) of the existing roadless areas would be allocated to moderate and intensive development LUDs. Approximately 307,000 acres (3.2%) would be suitable for harvest.  | 3.7 million acres (39%) of the existing roadless areas would be allocated to moderate and intensive development LUDs. Approximately 583,000 acres (6.1%) would be suitable for harvest.  |
| <b>Wilderness</b>   |   |  |  |  |  |  |  |
| <b>Wilderness:</b> None of the alternatives involve recommending new areas for wilderness or LUD II designation. Roadless areas within the Tongass National Forest were evaluated for recommendations as potential wilderness in the 2003 Forest Plan SEIS (USDA Forest Service 2003).  | Wilderness and LUD II areas would be managed under the updated and edited version of the current Forest Plan presented as the Proposed Land and Resource Management Plan.   | Same as Alternative 1.   | Same as Alternative 1.   | Same as Alternative 1.   | Wilderness and LUD II areas would be managed under the current Forest Plan.  | Same as Alternative 1.   | Same as Alternative 1.   |
| <b>ECONOMIC AND SOCIAL ENVIRONMENT</b>  |   |  |  |  |  |  |  |
| <b>Economic Impact Analysis</b>   |   |  |  |  |  |  |  |
| <b>Long-Term Wood Products Effects:</b> Long-term employment projections are based on the NIC I Component of the ASQ and include a projected non-Tongass harvest of 109 MMBF, which is the same under all the alternatives. Projections are average annual equivalents for the next 10 years and assume full implementation. These totals do not include indirect or induced employment effects.  | Projected average annual direct employment would be 365 logging jobs and 129 sawmill jobs under this alternative.   | Projected average annual direct employment would be 583 logging jobs and 336 sawmill jobs under this alternative.  | Projected average annual direct employment would be 680 logging jobs and 428 sawmill jobs under this alternative.  | Projected average annual direct employment would be 880 logging jobs and 616 sawmill jobs under this alternative.  | Projected average annual direct employment would be 803 logging jobs and 544 sawmill jobs under this alternative.  | Projected average annual direct employment would be 801 logging jobs and 542 sawmill jobs under this alternative.  | Projected average annual direct employment would be 1,098 logging jobs and 823 sawmill jobs under this alternative.  |
| <b>Recreation and Tourism:</b> Employment projections are based on a linear projection of demand and projected supply based on changes to ROS settings (see above). Projections are average annual equivalents for the next 10 years, based on the estimated non-resident share of recreation and tourism activity. These totals do not include indirect or induced employment effects.   | Projected average annual direct employment would be 4,327 jobs under this alternative.  | Projected average annual direct employment would be 4,323 jobs under this alternative.   | Projected average annual direct employment would be 4,321 jobs under this alternative.   | Projected average annual direct employment would be 4,312 jobs under this alternative.   | Projected average annual direct employment would be 4,319 jobs under this alternative.   | Projected average annual direct employment would be 4,319 jobs under this alternative.   | Projected average annual direct employment would be 4,310 jobs under this alternative.   |
| <b>Salmon Harvesting and Processing:</b> There is not expected to be any significant change to the commercial fishing or fish processing industries over the next decade as a result of National Forest activities.   | The Forest Plan Riparian and other S&Gs and monitoring are expected to reduce the effects of potential development activities on fish passage and habitat to low levels over the long-term and are not expected to have significant effects on the commercial fishing and fish processing industries. | Same as Alternative 1.   |
| <b>Economic Efficiency Analysis</b>   |   |  |  |  |  |  |  |
| <b>Present Net Value (PNV):</b> Economic efficiency analysis measures the costs and benefits to society associates with a given alternative. PNV figures are calculated by subtracting discounted costs from discounted benefits to yield a net value. PNV is calculated for those costs and benefits that can be assigned monetary values, in this case timber, recreation and tourism, and program management costs.  | The estimated PNV for this alternative is \$7,112 million.  | The estimated PNV for this alternative is \$6,884 million.   | The estimated PNV for this alternative is \$6,782 million.   | The estimated PNV for this alternative is \$6,472 million.   | The estimated PNV for this alternative is \$6,657 million.   | The estimated PNV for this alternative is \$6,662 million.   | The estimated PNV for this alternative is \$6,294 million.   |
| <b>Non-Use Values:</b> Non-use values are values that individuals assign to a resource independent of their use of that resource and include existence, option, and bequest values. These types of values are typically associated with undeveloped areas. Impacts to roadless areas are summarized above.  | Approximately 1.2 million acres (7%) of the Tongass would be allocated to moderate and intensive development LUDs. Approximately 435,000 acres are estimated to be suitable for harvest.  | Approximately 2.0 million acres (12%) of the Tongass would be allocated to moderate and intensive development LUDs. Approximately 563,000 acres are estimated to be suitable for harvest.  | Approximately 3.0 million acres (18%) of the Tongass would be allocated to moderate and intensive development LUDs. Approximately 697,000 acres are estimated to be suitable for harvest.  | Approximately 4.7 million acres (28%) of the Tongass would be allocated to moderate and intensive development LUDs. Approximately 1.01 million acres are estimated to be suitable for harvest.   | Approximately 3.6 million acres (22%) of the Tongass would be allocated to moderate and intensive development LUDs. Approximately 809,000 acres are estimated to be suitable for harvest.  | Approximately 3.6 million acres (22%) of the Tongass would be allocated to moderate and intensive development LUDs. Approximately 806,000 acres are estimated to be suitable for harvest.  | Approximately 5.0 million acres (30%) of the Tongass would be allocated to moderate and intensive development LUDs. Approximately 1.15 million acres are estimated to be suitable for harvest.   |