

**ALASKA ROADLESS RULEMAKING  
REGULATORY IMPACT ASSESSMENT  
AND  
COST-BENEFIT ASSESSMENT**

**SUMMARY**

The United States Department of Agriculture (USDA) is proposing to exempt the Tongass National Forest from the 2001 Roadless Area Conservation Rule, which prohibits tree harvest and road construction/reconstruction within inventoried roadless areas with certain limited exceptions. In addition, the proposed rule would provide an administrative procedure for correcting and modifying inventoried roadless area boundaries on the Chugach National Forest. In January 2018, the State of Alaska submitted a petition requesting that the Secretary of USDA consider exempting the Tongass National Forest from the 2001 Roadless Rule, in accordance with the Administrative Procedure Act, section 553(e) and the USDA's rulemaking procedures in 7 Code of Federal Regulations (CFR) 1.28. In June 2018, the USDA secretary directed the Forest Service to begin working to develop an Alaska state-specific roadless rule under the Administrative Procedure Act (APA). The Secretary of Agriculture has broad authority to protect and administer the National Forest System through regulation as provided by the Organic Administration Act of 1897 (the Organic Act), the Multiple-Use Sustained Yield Act of 1960, and the National Forest Management Act of 1976. These statutes provide the Secretary with discretion to determine the proper uses within any area, including the appropriate resource emphasis and mix of uses. Since the 2001 Roadless Area Conservation Rule was promulgated it has been the subject of uncertainty, due to litigation, on the Tongass National Forest. In August 2018, the Forest Service granted cooperating agency status to the State of Alaska. The USDA and the State of Alaska believe that an Alaska-specific roadless rule provides a unique opportunity to collaboratively resolve and offer certainty to roadless area management within the State of Alaska.

The Forest Service published a Notice of Intent (NOI) to prepare an environmental impact statement and initiate a public rulemaking process to address the management of inventoried roadless areas on the Tongass National Forest on August 30, 2018 (83 Federal Register [FR] 44252). As stated in that NOI, the USDA proposed to develop a durable and long-lasting regulation for the conservation and management of roadless areas on the Tongass National Forest (NF). The State-specific roadless rule would establish a land classification system designed to conserve roadless area characteristics on the Tongass NF while accommodating timber harvesting and road construction/reconstruction activities that are determined to be needed for forest management, economic development opportunities, and the exercise of valid existing rights or other non-discretionary legal authorities.

Executive Orders 13563 and 12866 direct agencies to assess costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety

effects, distributive impacts, and equity). These executive orders require that agencies conduct a regulatory analysis for economically significant regulatory actions. Economically significant regulatory actions are those that have an annual effect on the economy of \$100 million or more or adversely affect the economy or economic sectors. This rule has been designated a significant regulatory action and the economic effects are estimated to be less than \$100 million per year.

This document also examines cost to address the Executive Order 13771 requirement to provide the Agency's best estimates of the total costs or savings associated with each new regulation or repealed regulation. Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs, issued January 30, 2017, requires significant new regulations shall, to the extent permitted by law, be offset by the elimination of existing costs associated with at least two prior regulations.

For this rulemaking, USDA has elected to circulate the, full text, proposed rule for public comment. The proposal corresponds to the roadless management regime represented in Alternative 6 of the Draft Environmental Impact Statement for the Alaska Roadless Rule. The Department believes that providing the full text rendition of the rule will facilitate public understanding and comment for this rulemaking.

None of the regulatory alternatives propose changes to the projected timber sale quantity or timber demand projections set out in the Tongass Land and Resource Management Plan. The Tongass National Forest, in compliance with the Tongass Timber Reform Act (1990), seeks to provide an annual supply of timber to meet market demand to the extent consistent with providing for multiple use and sustained use of all renewable forest resources, and other requirements, including the National Forest Management Act of 1976 (NFMA). While projected harvest levels are not expected to be materially different under any of the alternatives under consideration, the roadless rule can influence the potential location or likelihood of future timber harvesting between the various alternatives. In other words, the alternatives examine different mixes of land areas and timber restrictions that would incrementally increase management flexibility for how the forest plan's timber harvest goals can be better achieved, but does not alter the plan's underlying goals or projected outcomes. In addition to timber related impacts this report includes discussion of recreation and tourism, commercial fisheries, mining related industries and impacts to non-market or non-use benefit categories.

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## INTRODUCTION

The Roadless Area Conservation Rule (2001 Roadless Rule) was adopted into regulations at Title 36 of the CFR Part 294 (36 CFR 294), Subpart B (66 FR 3244) in January 2001. Currently, about 9.2 million acres (55 percent) of the Tongass are managed as “inventoried roadless areas” (IRAs). IRAs contain generally undeveloped areas that are typically 5,000 acres or greater in size. The 2001 Roadless Rule applies nationwide (except Idaho and Colorado), and currently provides management direction for IRAs on 44.7 million acres of National Forests (approximately 24 percent of total National Forest System [NFS] lands) by prohibiting road construction and reconstruction and timber cutting, sale, or removal in those IRAs, with certain exceptions.

Since its promulgation, the 2001 Roadless Rule has been the subject of litigation. In 2001, the State of Alaska filed a complaint, challenging the USDA promulgation of the 2001 Roadless Rule and its application in Alaska. The USDA and the State of Alaska reached a settlement in 2003, and the USDA subsequently issued a rule temporarily exempting the Tongass NF from the 2001 Roadless Rule. In 2011, a federal court (District of Alaska) set aside the Tongass NF’s exemption and reinstated the 2001 Roadless Rule on the Tongass NF (with special instructions). The Alaska District Court’s ruling was initially reversed by a three-judge panel of the Ninth Circuit, but the District Court’s ruling was ultimately upheld in a 6–5 en banc ruling of the Ninth Circuit in 2015. Consequently, the 2001 Roadless Rule remains in effect in Alaska and the Forest Service continues to apply the 2001 National Rule to the Tongass NF.

In January 2018, the State of Alaska submitted a petition requesting that the Secretary of Agriculture consider exempting the Tongass NF from the 2001 Roadless Rule, pursuant to the APA and the USDA’s petition procedures in 7 CFR 1.28. In June 2018, the Secretary of Agriculture directed the Forest Service to begin working to develop an Alaska state-specific roadless rule. In August 2018, the Forest Service granted cooperating agency status in the preparation of analysis and documentation under the National Environmental Policy Act (40 CFR 1501.6) to the State of Alaska. The Forest Service published a Notice of Intent (NOI) to prepare an environmental impact statement (EIS) and initiate a public rulemaking process to address the management of IRAs on the Tongass NF on August 30, 2018 (83 FR 44252). As stated in that NOI, the USDA proposes to develop a durable and long-lasting regulation for the conservation and management of roadless areas on the Tongass NF. The state-specific roadless rule would establish a land classification system designed to conserve roadless area characteristics on the Tongass NF while accommodating timber harvest and road construction/reconstruction activities that are determined to be needed for forest management, economic development opportunities, and the exercise of valid existing rights or other non-discretionary legal authorities.

This report meets the requirements of Executive Order 12866 for a significant rule. Executive Orders 13563 and 12866 direct agencies to assess costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. These executive orders require that agencies conduct a regulatory analysis for

economically significant regulatory actions. Economically significant regulatory actions are those that have an annual effect on the economy of \$100 million or more or adversely affect the economy or economic sectors. Under the proposed rule (Alternatives 6), additional timber harvest opportunities would be provided with removal of all 9.2 million inventoried roadless acres on the Tongass from roadless protection (Table 1). Estimated gains of suitable old growth (165,000 acres) are equivalent to about 72 percent of the acres available under the baseline 2001 Roadless Rule and almost seven times the old-growth acres expected to be harvested over the next 25 years (24,000 acres); thus the proposed rule would not decrease timber related jobs, income or output. None of the regulatory alternatives propose changes to the projected timber sale quantity or timber demand projections set out in the Tongass Land and Resource Management Plan. The Tongass National Forest, in compliance with the Tongass Timber Reform Act (1990), seeks to provide an annual supply of timber to meet market demand to the extent consistent with providing for multiple use and sustained use of all renewable forest resources, and other requirements, including NFMA. The proposed rule is not anticipated to alter output or employment in local economies associated with recreation and tourism, commercial fisheries and mining related industries (see the discussion below for more detail) assuming existing protections remain in place, including those in the 2016 Forest Plan. The proposed rule has been designated a significant regulatory action. This rule has been designated a significant regulatory action and the economic effects are estimated to be less than \$100 million per year.

This document also examines cost to address the Executive Order 13771 requirement to provide the Agency's best estimates of the total costs or savings associated with each new regulation or repealed regulation. Recreationists and related industry (including outfitters and guides) could experience lost revenue from potential displacement due to timber harvest. Approximately \$77,000 in outfitter and guided related expenses and \$319,000 in total expenditures across all recreation related industries in Southeast Alaska (including outfitters and guides) from IRA visitors who may be subject to displacement from average annual young- and old-growth harvest<sup>1</sup>. For some recreation uses, additional development for timber harvest and other infrastructure could provide increased access to the Forest and more opportunities. Nearly all new roads constructed under the regulatory alternatives would be closed following harvest. These roads would, therefore, not be available for use by highway vehicles or high-clearance vehicles. They may, however, be available for access by other methods and would, as a result, have the potential to affect existing recreation patterns. Some roads would be left open and available for access on maintained roads for administrative use, recreation and other uses such as infrastructure.

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<sup>1</sup> These estimates provide an upper-bound ceiling for consideration of potential lost revenue, alongside cost savings to the timber industry, and should not be used as precise estimates of roadless area visitor expenditures or losses. Expenses incurred by visitors are not necessarily lost but subject to displacement related changes. While some businesses may lose revenues, if visitors choose not to travel to Southeast Alaska, others may see increases in revenues if visitors choose to stay longer or travel to substitute sites within Southeast Alaska. Detailed explanation and sources for this analysis is provided below in the Cost Benefit sub-section Potential Impacts by Resource Area.

If costs from potential displacement of recreationists accrued they would occur alongside cost reduction from more acres of land available for timber harvest. Timber harvest levels on the Tongass NF are set by the 2016 Forest Plan (USDA Forest Service 2016) and continual timber demand monitoring, currently 46 million board feet (MMBF). The propose rule (Alternatives 6) would increase flexibility for timber managers for designing timber sales that appraise positive. Cost savings from improved flexibility could, in turn, potentially improve the Forest Service’s ability to offer economic sales that meet the needs of industry. Areas closer to markets, either a mill or export facility, are also more likely to offer more economic timber sale options. More distant areas would be relatively expensive to harvest and less likely to be accessed. Estimated harvest cost savings (felling, yarding, loading, etc.) range from \$1 to \$2 million dollars per year depending on the level of harvest (one standard deviation less than the average annual harvest on the Tongass NF over the last 16 years, in Table 4, to the harvest ceiling under the 2016 Forest Plan of 46 MMBF)<sup>2</sup>. This range of harvest accounts for uncertainty in timber demand; accounting for past influences of the 2016 and 2008 Forest Plans by using the annual average depicted in Table 4. In addition the upper-bound or ceiling of 46 MMBF, set forth by the 2016 Forest Plan, is a projection of future demand. This includes the agency’s responsibilities under the Tongass Timber Reform Act, which directs the Forest Service to seek to provide a supply of timber from the Tongass National Forest that meets annual market demand and the market demand for each planning cycle to the extent consistent with providing for the multiple-use and sustained-yield of all renewable resources and other applicable requirements, including NFMA. While many factors can influence the cost of timber harvest, areas along existing roads are typically more economically efficient, followed by areas where existing roads can be easily extended. The potential increase in roads would likely increase maintenance costs.

Because the proposed rule and other regulatory alternatives do not prescribe site-specific activities, it is difficult to predict changes in benefits under the different regulatory alternatives. It should also be emphasized that the types of benefits derived from uses of roadless areas in Alaska are far ranging and include a number of non-market and non-use benefit categories. As a consequence, benefits are discussed qualitatively in many sections of this report.

## **RELATIONSHIP OF PROPOSED RULE TO THE FOREST PLAN**

The National Forest Management Act of 1976 (NFMA) requires the Forest Service to develop, maintain and as appropriate, revise land and resource management plans (forest plans) for units of the National Forest System. Land management plans provide a framework for integrated resource management and for guiding project and activity decision making, but plans do not authorize projects or activities or commit the Forest Service to take action. A revised Tongass Land Management Plan was issued in 1997, and amended in 2008 and 2016. Forest planning is a distinct and separate process from USDA’s various roadless rulemakings. See Kootenai Tribe of

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<sup>2</sup> Detailed explanation of the source (USDA Forest Service 2019b) and calculations used in this analysis are provided below in the Cost Benefit sub-section Potential Impacts by Resource Area

Idaho v. Veneman, 313 F.2d 1094 (9th Cir. 2002); and State of Wyoming v. USDA, 661 F.3d 1209 (10th Cir. 2011).

All forest plans must conform to existing laws and regulations as well as new laws and regulations. See 36 CFR 219.1(f) and 219.13(c). All of USDA's previous roadless rules, national and state-specific, have directed that: (1) no amendment or revision of any forest plan was compelled by promulgation of such rules, (2) subsequent forest planning decisions could not revise the Secretary's regulatory instructions, and (3) line officers were to conform project decisions to the prohibitions and exceptions set forth in the applicable rules. The proposed rule would continue this approach with one minor exception.

The proposed rule would direct the Tongass Forest Supervisor to provide notice of an administrative change (36 CFR 219.13(c)) concerning lands that were deemed unsuitable in the 2016 Tongass Forest Plan (See Tongass Forest Plan, Appendix A: Identification of Lands Suitable for Timber Production and Limitations on Timber Harvest) solely due to the application of the 2001 Roadless Rule. Similarly, an administrative change addressing timber suitability would occur for other alternatives that alter the underlying assumptions of the 2016 plan's identification of suitable lands. Any such lands would be appropriately returned to the suitable timber base via the administrative change provision of the planning regulations. All other aspects of the Tongass Forest Plan would be consistent with the proposed rule including the goals, objectives, management prescriptions, standards, guidelines, projected timber sale quantity, projected wood sale quantity, and young-growth transition strategy. This includes standards and guidelines for non-timber resources, for example riparian management standards and guidelines which provide protection for fisheries with subsistence and commercial importance. All timber harvest, including harvest in areas formerly designated as inventoried roadless areas, would be compelled to adhere to these resource standards and guidelines (fisheries, water quality, air, recreation, etc.), thus providing continuation of 2016 Forest Plan protections under all the regulatory alternatives. While a forest plan amendment or revision is neither required nor expected to occur due to this rulemaking, the public involvement opportunities associated with this rulemaking are equivalent to any notice or public involvement requirements under the National Forest Management Act.

Although the Forest Service has broad discretion during forest plan revision to modify management direction, any change would need to be consistent with applicable law, regulation, and policies, including any final Alaska Roadless Rule. Similarly, the Tongass Timber Reform Act directs the Forest Service to seek to provide a supply of timber from the Tongass National Forest that meets annual market demand and the market demand for each planning cycle to the extent consistent with providing for the multiple-use and sustained-yield of all renewable resources and other applicable requirements, including the NFMA. The current Forest Plan anticipates sufficient timber availability to meet projected demand as described in the 2016 Tongass Forest Plan Amendment Final EIS and Record of Decision. In addition, the 2016 Tongass Forest Plan provides guidance to conduct annual monitoring and review of current timber demand. Similarly, the Tongass Timber Reform Act provides for protection of riparian habitats and the multiple use and sustained yield of all renewable surface resources. In addition, watershed protection measures, such as riparian buffers and application of watershed

conservation measures will be provided for future revisions or amendments in conformance with all applicable laws, including the Clean Water Act, Magnuson–Stevens Fishery Conservation and Management Act, and Alaska’s Department of Environmental Conservation Water Quality Standards.

Analysis of harvest costs savings under the proposed rule (and Alternatives 2 through 5) indicates the proposed rule and Alternatives 2 through 5 could provide approximately \$2 million dollars in annual savings at the harvest ceiling of 46 MMBF under the 2016 Forest Plan FEIS (USDA Forest Service 2019b). Detailed explanation and sources for this analysis is provided below in the Cost Benefit sub-section Potential Impacts by Resource Area.

A unique aspect of the Tongass Forest Plan is the land use designation (LUD) called LUD II, a statutorily established land classification that applies on lands as described in the Tongass National Forest Land Management Plan, completed March, 1979 and amended winter 1985-1986, for areas allocated to be managed in a roadless state to retain their wildland character. Wildlife and fish habitat improvement and primitive recreation facility development are permitted in these areas. LUD II areas are defined in the Tongass Timber Reform Act (TTRA; Title II, Section 201) and the National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291, 128 Stat. 3729, Section 3720(f)). The statutory direction for LUD II areas would remain in place regardless of whether the 2001 Rule or any other rule is promulgated.

## **DESCRIPTION OF THE PROPOSED RULE AND ALTERNATIVES**

Alternative 6 is the proposed rule and provides maximum additional timber harvest opportunity and is the full exemption alternative. Under the proposed rule, roadless protection would be removed from all roadless areas on the Tongass, resulting in a reduction of 9.2 million acres of roadless areas (Table 1). Former roadless areas would be managed in accordance with the 2016 Forest Plan (USDA Forest Service 2016) with an estimated net gain of about 165,000 acres of suitable old growth, including 59,000 acres of high-volume suitable old growth (Table 1). This estimated gain (165,000 acres) is equivalent to about 72 percent of the acres available under the baseline 2001 roadless rule and almost seven times the old-growth acres expected to be harvested over the next 25 years (24,000 acres).

Aspects of the Tongass Forest Plan are consistent with the proposed rule including the goals, objectives, management prescriptions, standards, guidelines, projected timber sale quantity, projected wood sale quantity, and young-growth transition strategy. Analysis relies on baseline conditions under the 2016 Forest Plan that includes standards and guidelines for other non-timber resources, for example Riparian Management standards and guidelines providing protection for fisheries with subsistence and commercial importance. All timber harvest, including harvest in areas formerly designated as IRAs, would be compelled to adhere to these resource standards and guidelines (fisheries, water quality, air, recreation, etc.), thus providing continuation of 2016 Forest Plan protections under all the regulatory alternatives.

The proposed rule is programmatic and does not directly authorize any ground-disturbing activities. Effects of ground-disturbing activities are considered as indirect effects in this

assessment. Before authorizing a land-use activity, the Forest Service must complete a site-specific environmental analysis, pursuant to the National Environmental Policy Act (NEPA) and its implementing regulations. When a specific project or activity is proposed on NFS land, the Forest Service conducts site-specific analyses of the effects associated with that project or activity and makes a decision that authorizes implementation of that project or activity (this requirement exists under all regulatory alternatives including the baseline 2001 Roadless Rule).

This report provides effects of the proposed rule in comparison to baseline conditions represented as a continuation of current land management pursuant to the 2001 Roadless Rule, presented as “2001 Roadless Rule” in the discussion below.

Alternative 1 applies to the provisions of the 2001 Roadless Rule to inventoried roadless areas under the No Action Alternative and is referred to as the baseline 2001 roadless rule throughout this document. Alternative 1 takes no action and leaves all of Alaska under the 2001 Roadless Rule, including the Tongass NF. Under Alternative 1, roadless areas consist of 110 IRAs identified in the 2001 Roadless Rule. As a result of ownership changes and boundary alignment corrections these IRAs currently encompass 9.2 million acres of NFS land. Provisions of the 2001 Roadless Rule remain intact across the 110 IRAs, encompassing approximately 55 percent of the Tongass NF. Under Alternative 1 baseline 2001 roadless rule, about 230,000 acres of old growth and 334,000 acres of young growth are currently suitable for timber production.

Alternative 2 maximizes roadless area protection, by adding an additional 133,000 acres as Alaska Roadless Areas, while providing for additional timber harvest opportunities by removing areas generally known as “roaded roadless” areas but also include additional areas considered to be substantially altered.

Alternative 3 provides more timber harvest opportunities than Alternative 2 by removing substantially-altered roadless areas (including roaded roadless, similar to Alternative 2) and extending the bounds of these areas to logical end points of existing road and timber harvest systems (212,000 acres), generally defined as the nearest watershed boundary (i.e., ridgeline of 14th-field hydrologic unit) from an existing road system. Removing these areas from the roadless inventory represents the logical extensions of substantially altered acres from existing infrastructure and likely encompasses the more economically feasible locations for future timber harvest with the least impact to roadless characteristics. Approximately 3,208,000 acres under Alternative 3 would be managed under Watershed Priority category and applied to areas identified in the 2016 Forest Plan as Tongass 77 (T77) Watersheds and The Nature Conservancy (TNC)/Audubon Conservation Priority Areas. Alternative 3 also provides additional timber harvest opportunity by designation of Community Priority areas around five communities, namely Yakutat, Juneau, Sitka, Ketchikan, and Wrangell. Based on cooperating agency input, the Community Priority should have also been applied around the communities of Hydaburg and Kake and will be accounted for in the Final Rule. Community Priority areas allow for small-scale timber harvest and associated road construction and reconstruction. Further detail on this and other Alaska Roadless Area Land Management Categories are provided in the next section.

Alternative 4 provides significant additional timber harvest opportunity but maintains roadless protections for Scenic Viewshed Land Use Designations (LUD) and Tongass 77 (T77) Watersheds/The Nature Conservancy (TNC)/Audubon Conservation Priority Areas that are in roadless areas. There is a small amount of young growth within these areas that would be available for timber harvest. Approximately 375,000 acres are removed from roadless designation, including substantially-altered areas and logical extensions of substantially-altered acres (similar to Alternatives 2 and 3), along with selected additional locations for potentially feasible economic timber sales. These acres are also converted from unsuitable to suitable timber lands, resulting in significant additional timber harvest opportunity.

Alternative 5 provides the same timber harvest opportunity as the Alternative 6 proposed rule while maintaining some roadless area protection in areas where the Forest Plan currently does not allow commercial timber harvest. Though the 2001 Roadless Rule represents baseline conditions, the proposed rule is compared to the other regulatory alternatives to fully understand the impacts of the proposed rule. Table 1 provides a comparison of the regulatory alternatives and further discussion of the Alaska Roadless Areas (ARA) management categories are provided below.

Alternative 6 is the proposed rule and provides maximum additional timber harvest opportunity and is the full exemption alternative. A description of this regulatory alternative is provided first in this section.

Table 1. Roadless Areas by Alternative and Management Category

| Roadless Category<br>(acres)   | Alternative        |                             |                               |   |                          | Proposed Rule |
|--|--------------------|-----------------------------|-------------------------------|---|--------------------------|---------------|
|  | Baseline           | 2                           | 3                             | 4   | 5                        |               |
|  | 2001 Roadless Rule | Roaded Roadless Alternative | Logical Extension Alternative | Partial Dev LUDs <sup>1</sup> Alternative | All Dev LUDs Alternative |               |
| Total Designated Roadless Area   | 9,200,000          | 9,220,000                   | 8,103,000                     | 8,857,000                                 | 6,905,000                | 0             |
| <b>ARA Management Categories</b>   |                    |                             |                               |   |                          |               |
| Roadless Priority  | N/A                | 5,114,000                   | 4,653,000                     | 7,252,000                                 | 6,078,000                | 0             |
| LUD II Priority  | N/A                | 856,000                     | 0                             | 856,000                                   | 828,000                  | 0             |
| Watershed Priority   | N/A                | 3,250,000                   | 3,208,000                     | 0   | 0                        | 0             |
| Community Priority   | N/A                | 0                           | 241,000                       | 0   | 0                        | 0             |
| Timber Priority  | N/A                | 0                           | 0                             | 749,000                                   | 0                        | 0             |
| <b>Old-Growth Acres Suitable for Timber Production</b>   |                    |                             |                               |   |                          |               |
| Total Acres  | 230,000            | 247,000                     | 305,000                       | 388,000                                   | 395,000                  | 395,000       |
| Net Change   | 0                  | 18,000                      | 76,000                        | 158,000                                   | 165,000                  | 165,000       |
| <b>T77 &amp; TNC/ Audubon Conservation Priority Areas Outside of Roadless given Long-term Protection</b> |                    |                             |                               |   |                          |               |
| Total Acres  | 0                  | 0                           | 377,000                       | 0   | 0                        | 0             |

N/A = not applicable

<sup>1</sup> Includes Timber Production and Modified Landscape LUDs, but not Scenic Viewshed.

### **Alaska Roadless Area Land Management Categories**

Regulatory alternatives, apart from the baseline 2001 Roadless rule and the proposed rule, provide for a variety of management approaches within roadless areas through ARA land management categories which include Land Use Designation (LUD) II Priority, Watershed Priority, Community Priority, Roadless Priority, and Timber Priority. The management categories prohibit timber harvest, road construction, and road reconstruction with a range of exceptions that are applied differentially across the regulatory alternatives. A brief description of each management category follows.

#### **Roadless Priority (Alternatives 2, 3, 4 and 5)**

The Roadless Priority management category is similar to the 2001 Roadless Rule but is less restrictive and addresses Alaska-specific concerns. Specifically, it expressly provides for infrastructure development to connect and support local communities, and road construction/reconstruction for access to renewable energy and leasable minerals. The leasable minerals exception provides for roading associated with geothermal, oil, gas, and/or coal development. In addition, the Roadless Priority category includes specific exceptions that, while they are already allowed under the 2001 Roadless Rule, are included to improve overall clarity.

#### **LUD II Priority (Alternatives 2, 4 and 5)**

Land Use Development (LUD) II designated areas existed before the 2001 roadless rule and approximately 870,000 acres of the Tongass are congressionally designated as LUD II (826,000 acres currently are additionally designated as IRA under the 2001 Roadless Rule and 44,000 acres currently not designated as IRA) managed in a roadless state to retain their wildland character (as defined in the Tongass Timber Reform Act of 1990 and the National Defense Authorization Act for Fiscal Year 2015).

Under Alternatives 2, 4 and 5 the LUD II Priority category would reduce confusion by having the roadless regulatory management direction manage these areas only in accordance with the statutory direction: that these lands will be managed in a roadless state to retain their wildland character as defined in the Tongass Timber Reform Act of 1990 (Title II, Section 201) and the National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291, 128 Stat. 3729, Section 3720(e)(4)). Alternatives 2 and 4 propose to designate all of the congressionally designated LUD II acres as LUD II Priority ARAs. Notably, Alternative 3 proposes to remove all LUD II areas from roadless designation rather than designating an ARA category. LUD II areas under Alternative 3 would continue to be managed under their congressional designations. Alternative 5 proposes to apply the LUD II Priority category only to LUD II areas that are currently designated as IRA.

#### **Watershed Priority (Alternatives 2 and 3)**

The Watershed Priority category is more protective than the 2001 Roadless Rule as it offers fewer exceptions for timber harvest, road construction and road reconstruction. It also provides for activities specific to aquatic habitat improvement. Approximately 3,250,000 acres in Alternative 2 while 3,208,000 acres under Alternative 3 would be managed under this management category. The Watershed Priority category is applied to areas identified in the 2016 Forest Plan as T77 Watersheds and TNC/Audubon Conservation Priority Areas. Additionally,

for Alternative 3, commercial old-growth timber harvest would be prohibited on National Forest System lands in T77 and TNC/Audubon Conservation Areas including those that extend beyond Alaska Roadless Area boundaries.

### **Community Priority (Alternative 3)**

The Community Priority category allows for small-scale timber harvest and associated road construction and reconstruction. In addition, it allows for infrastructure development to connect and support local communities, and traditional Alaska Native cultural uses. In all cases, activities within Community Priority ARAs would have to be consistent with the underlying Forest Plan LUD requirements. This is to say that even if a timber harvest, road building, or other activity would be permissible under the Alaska Roadless Rule, it may not be allowable because of Forest Plan requirements specific to the LUD that applies to the area. This management category applies to approximately 241,000 acres and is only proposed under Alternative 3 adjacent to five communities: Sitka, Wrangell, Juneau, Ketchikan, and Yakutat. However, based on cooperating agency input, the Community Priority should have also been applied around the communities of Hydaburg and Kake and will be accounted for in the Final Rule.

This management category was developed to address specific desires of some communities to retain roadless protections while also allowing for small timber operators in the community, infrastructure development to support the communities, and provide for traditional Alaska Native cultural uses. The provision allows for road building to accommodate small commercial sale less than one million board feet (which does not exclude larger operators but designed to reduce barriers to entry for smaller operators). The Forest Service is seeking public input on this management category, specifically with respect to whether this designation should be applied to other communities/areas. The Forest Service proposes to consider applying the Community Priority land management category to ARAs either adjacent to communities or within Community Priority areas as requested by non-profit community associations organized under State of Alaska law (Alaska Statute 10.20.005), municipal governments, or tribal governments.

### **T77 Watersheds and TNC/Audubon Conservation Priority Areas – Additional Protections (Alternative 3)**

Watershed protection is a key element of roadless management. Watersheds are highly valued sources of municipal drinking water, support fisheries and wildlife habitat, and can act as keystones for economic activities. Under Alternative 3, areas identified in the 2016 Tongass Forest Plan as T77 and TNC/Audubon Conservation Priority Areas (high priority watershed areas) would be afforded added protection through the roadless regulation. Specifically, old-growth timber harvest would be prohibited within these areas, subject to the described exceptions. A prohibition on old growth harvesting already exists through the Tongass Forest Plan. But Alternative 3 establishes regulatory continuity between these roadless and watershed management systems given how extensively they overlap (the listed watersheds comprise over half of the Tongass' roadless areas, and approximately 90% of the watershed areas are within roadless area boundaries). Thus the old growth harvest prohibition would be extended beyond the designated roadless area boundaries in order to maintain the balance and integrity of the watershed protection system. Young-growth timber harvest outside of Alaska Roadless Areas within the high priority watershed areas is not prohibited.

As with all roadless rule instructions, the new old growth harvest prohibition would operate as an overlay to the forest plan, with the plan continuing to provide management direction in other regards. In this manner, Alternative 3 affords high priority watershed areas greater protection than under the 2001 Roadless Rule.

#### **Timber Priority (Alternative 4)**

The Timber Priority category allows timber harvest, road construction, and road reconstruction to facilitate timber management and provide economic opportunity. This management category applies to approximately 856,000 acres and is only proposed under Alternative 4.

## **ANALYSIS REQUIREMENTS**

Executive Order (EO) 12866, Regulatory Planning and Review, issued in 1993, reformed the federal government’s regulatory process as highlighted by primary objectives: 1) enhancing planning and coordination across regulations; 2) reaffirming federal government primacy in regulatory decision-making; 3) restoring the integrity of regulatory review; and 4) making the regulatory process more accessible to the public.

The proposed rule (Alternative 6) is classified as significant, as determined by the Office of Management and Budget and this report meets the requirements of Executive Order 12866 for a significant rule. Executive Orders 13563 and 12866 direct agencies to assess costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. Analysis is required to “assess both the costs and benefits” of the intended regulation, recognizing quantifiable analysis is not always possible, but that a reasoned determination that the benefits justify the regulatory costs.

The significance determination also requires consideration and small entity impacts consistent with requirements for complying with the Regulatory Flexibility Act, as amended by the Small Business Regulatory Flexibility Enforcement Fairness Act of 1996 (SBREFA), and Executive Order 13272. Small entity impacts and opportunities are examined in the compliance document titled Alaska Roadless Rulemaking, Regulatory Flexibility Analysis (USDA Forest Service 2019a).

## **REGIONAL ECONOMIC OVERVIEW**

Southeast Alaska employment in 2017 is summarized by sector in Table 2. Government and the visitor sector were the largest employers accounting for 29 percent and 17 percent of total employment, respectively. The government sector is the main source of year-round employment in all the communities in Southeast Alaska. In addition to direct employment in government, many of the area’s private sector jobs are also dependent on government funding and contracts.

Private sector activities dependent on government funding include road construction and health care services.

State government employment has dropped significantly since 2012, with a loss of 850 state jobs in Southeast Alaska from 2012 through July 2018. Three-quarters of these losses occurred in Juneau. These losses have accompanied declining oil production and prices, with state revenues falling by 70 percent from fiscal year 2013 to fiscal year 2018, and the state budget dropping by 40 percent. Federal government employment has also declined in Southeast Alaska over the past decade, with the loss of 600 jobs since 2005 (Southeast Conference 2018).

Table 2. Southeast Alaska Annual Employment and Earnings by Sector, 2017

| Economic Sector <sup>1</sup>                        | Total Employment (Jobs) | Total Earnings (\$M) <sup>2</sup> | Percent of Total |             |
|---|-------------------------|-----------------------------------|------------------|-------------|
|   |                         |                                   | Employment       | Earnings    |
| Government (includes Coast Guard)                   | 13,256                  | 769.0                             | 29%              | 35%         |
| Visitor   | 7,739                   | 231.4                             | 17%              | 11%         |
| Seafood   | 3,829                   | 216.5                             | 8%               | 10%         |
| Retail and Wholesale Trade                          | 4,474                   | 145.2                             | 10%              | 7%          |
| Health Care (private only)                          | 2,732                   | 150.1                             | 6%               | 7%          |
| Construction  | 1,932                   | 121.9                             | 4%               | 6%          |
| Financial   | 1,964                   | 118.5                             | 4%               | 5%          |
| Professional and Business Services                  | 2,869                   | 118.5                             | 6%               | 5%          |
| Social Services                                     | 1,580                   | 46.1                              | 3%               | 2%          |
| Mining  | 886                     | 90.5                              | 2%               | 4%          |
| Information <sup>3</sup>                            | 571                     | 23.9                              | 1%               | 1%          |
| Timber  | 354                     | 18.7                              | 1%               | 1%          |
| Warehousing, Utilities, Transportation <sup>4</sup> | 903                     | 53.9                              | 2%               | 2%          |
| Other   | 2,551                   | 91.8                              | 6%               | 4%          |
| <b>Total</b>  | <b>45,640</b>           | <b>2,195.9</b>                    | <b>100%</b>      | <b>100%</b> |

Notes:

<sup>1</sup> These data were compiled on behalf of Southeast Conference based on data collected by the Alaska DOL and the U.S. Census Bureau. The Alaska DOL data are for 2017 for non-agricultural wage and salary employment. These data do not include proprietors or self-employed workers, and are, therefore, supplemented using data from the 2016 US Census Nonemployer Statistics, which specifically count proprietors and the self-employed.

<sup>2</sup> Total earnings are expressed in millions of dollars.

<sup>3</sup> The Information sector, as defined here, includes publishing, broadcasting, and telecommunications.

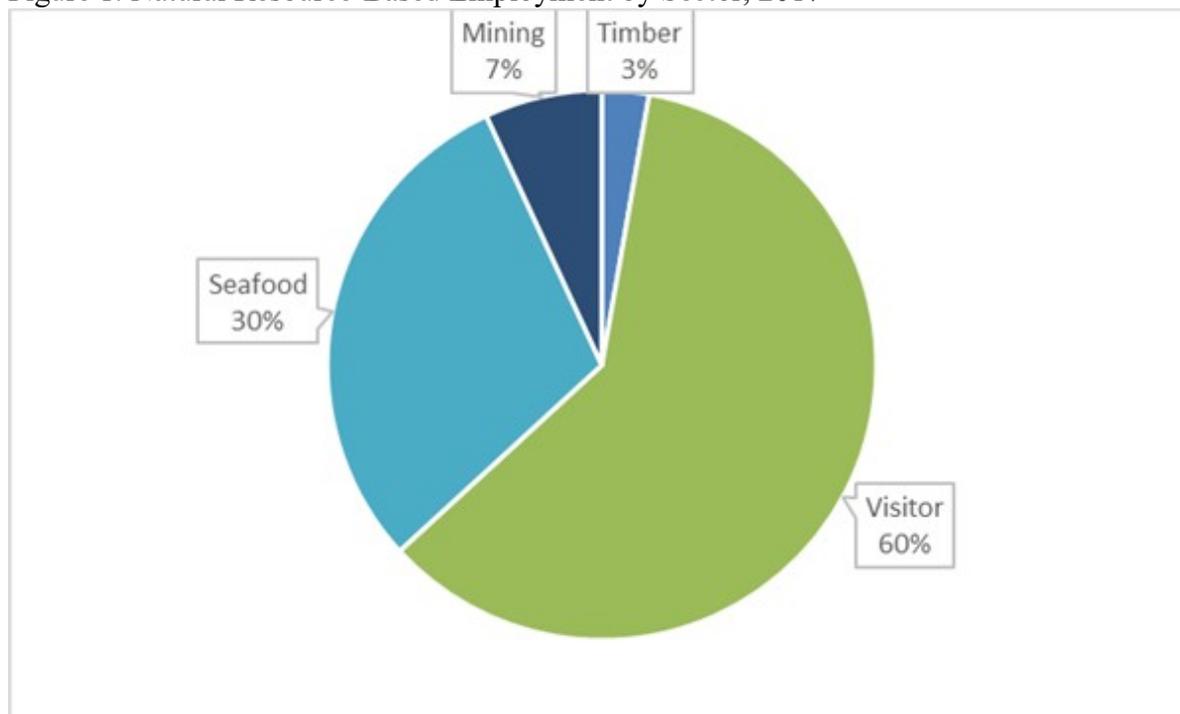
<sup>4</sup> Includes non-visitor-related transportation only. Visitor-related transportation is included in the visitor sector.

Source: Southeast Conference 2018

### Natural Resource-Based Industries

Employment in natural resource-based industries – timber, visitor, seafood, and mining – together accounted for an estimated 12,808 jobs in 2017, more than one-quarter (28 percent) of total employment in Southeast Alaska (Table 2). The estimated distribution of resource-dependent employment is shown by industry in Figure 1. The visitor industry accounted for more than half (60 percent) of this total, followed by the seafood sector, which accounted for almost one-third (30 percent). Mining accounted for 7 percent and wood products made up 3 percent (Figure 1).

Figure 1. Natural Resource-Based Employment by Sector, 2017



Note:  
Total = 12,808 Employees  
Source: Southeast Conference 2018

### Forest Products

Southeast Alaska timber is primarily purchased and harvested from Tongass National Forest lands managed by the USDA Forest Service, from the State of Alaska (Division of Forestry, Alaska Mental Health Trust Land Authority, and University of Alaska Trust Land Office), and Alaska Native Village and Regional corporations (Alaska Native corporations). Sawmill employment has historically been supported by Forest Service timber sales, with state timber harvest also contributing. Logging employment is generated from all ownerships, including Alaska Native corporation lands.

Timber industry employment in Southeast Alaska peaked at the end of the 1980s, before dropping sharply in the 1990s. Much of this job loss was associated with closure of the large pulp mills in Sitka (1993) and Ketchikan (1997). Timber employment has continued to decline since the 1990s, falling from a recent high of 561 jobs in 2003 to 202 jobs in 2017 (Table 3; Figure 2). Tongass National Forest-related employment in logging and sawmilling declined from 199 jobs in 2003 to a low of 61 jobs in 2017. Non-Tongass timber employment also declined over this period, falling from a recent high of 362 jobs in 2003 to 109 jobs in 2017, a drop of 70 percent (Table 3). From 2002 to 2017 harvest activities on the Tongass supported about 41 percent of timber jobs in Southeast Alaska, on average. Factors contributing to the decline include changes in the structure of the Alaska forest sector, macroeconomic conditions both in the United States and overseas (e.g., shifting demand from Asian markets), markets for Alaskan

products, and conditions faced by Alaska’s competitors. In addition, Alaska faces competitive challenges due to its remote location: the high costs of harvesting and transportation in remote areas of southeast Alaska and the relatively lower price commanded in dimensional lumber markets limits profitability (Daniels et al. 2016). Harvest activities supporting employment have included pre-commercial thinning, generally defined as a silvicultural treatment to reduce stand density, primarily to improve forest health.

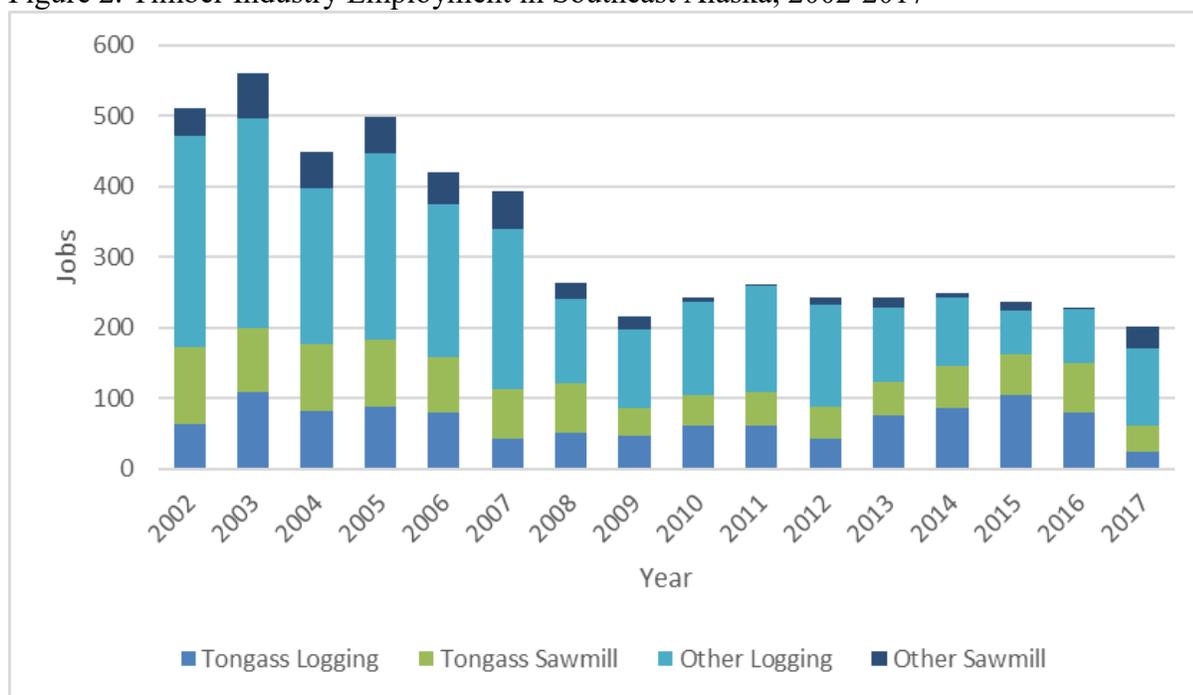
Table 3. Timber Industry Employment in Southeast Alaska, 2002-2017

| Year <sup>1</sup> | Tongass Logging | Tongass Sawmill | Total Tongass-Related Employment | Other Logging | Other Sawmill | Total Other Timber Employment | Total Timber Industry Employment |
|-------------------|-----------------|-----------------|----------------------------------|---------------|---------------|-------------------------------|----------------------------------|
| 2002              | 63              | 110             | 173                              | 299           | 40            | 339                           | 512                              |
| 2003              | 108             | 91              | 199                              | 298           | 64            | 362                           | 561                              |
| 2004              | 82              | 95              | 177                              | 220           | 53            | 273                           | 450                              |
| 2005              | 88              | 96              | 184                              | 263           | 52            | 315                           | 499                              |
| 2006              | 81              | 77              | 158                              | 217           | 46            | 263                           | 421                              |
| 2007              | 44              | 70              | 114                              | 225           | 54            | 279                           | 393                              |
| 2008              | 52              | 70              | 122                              | 118           | 24            | 142                           | 264                              |
| 2009              | 48              | 39              | 87                               | 110           | 19            | 129                           | 216                              |
| 2010              | 61              | 43              | 104                              | 133           | 7             | 140                           | 244                              |
| 2011              | 62              | 47              | 109                              | 150           | 3             | 153                           | 262                              |
| 2012              | 42              | 47              | 89                               | 144           | 11            | 155                           | 244                              |
| 2013              | 75              | 48              | 123                              | 106           | 14            | 120                           | 243                              |
| 2014              | 86              | 60              | 146                              | 96            | 7             | 104                           | 249                              |
| 2015              | 104             | 58              | 162                              | 63            | 12            | 75                            | 237                              |
| 2016              | 81              | 70              | 151                              | 76            | 1             | 77                            | 228                              |
| 2017              | 24              | 37              | 61                               | 109           | 32            | 141                           | 202                              |

Note:

<sup>1</sup> Data are presented by calendar year. Source: USDA Forest Service 2018a

Figure 2. Timber Industry Employment in Southeast Alaska, 2002-2017



Source: USDA Forest Service 2018a

Timber harvest in Southeast Alaska also peaked in the late 1980s, with harvest levels slightly below 1 billion board feet. Total harvest in 2017 was 74.2 MMBF, about 8 percent of peak levels. Harvest on the Tongass accounted for about 21 percent (16.0 MMBF) of this total, with almost two-thirds (63 percent, 46.4 MMBF) of the overall total provided by Alaska Native corporation lands and 16 percent (11.9 MMBF) provided by the State of Alaska (Table 4; Figure 3). Table 4 displays general declining trends in timber harvest; however caution is recommended when inferring causality between timber harvest and market demand. Figure 3 provides projected volume of demand, across Southeast Alaska timber product markets, from 2015 to 2030 (Daniels et al 2016).

Table 4. Timber Harvest in Southeast Alaska by Ownership, 2002–2017

| Year <sup>1</sup>   | Tongass National Forest | State of Alaska <sup>2</sup> | Alaska Native Corporation | Total |
|---------------------|-------------------------|------------------------------|---------------------------|-------|
| 2002                | 31.9                    | 57.3                         | 101.7                     | 190.9 |
| 2003                | 48.1                    | 34.8                         | 105.7                     | 188.6 |
| 2004                | 49.2                    | 24.2                         | 98.9                      | 172.3 |
| 2005 <sup>3</sup>   | 46.6                    | 42.9                         | 103.9                     | 193.4 |
| 2006 <sup>3</sup>   | 40.0                    | 44.6                         | 71.2                      | 155.8 |
| 2007 <sup>3 4</sup> | 22.5                    | 44.6                         | 50.0                      | 117.1 |
| 2008                | 30.0                    | 11.9                         | 52.3                      | 94.2  |
| 2009                | 28.3                    | 13.5                         | 51.8                      | 93.6  |
| 2010                | 35.7                    | 10.5                         | 66.4                      | 112.6 |
| 2011                | 31.6                    | 16.3                         | 63.1                      | 111.0 |
| 2012                | 17.5                    | 10.8                         | 56.1                      | 84.4  |

|         |      |      |      |       |
|---------|------|------|------|-------|
| 2013    | 41.2 | 11.2 | 47.4 | 99.8  |
| 2014    | 36.7 | 12.0 | 29.3 | 78.0  |
| 2015    | 59.5 | 6.2  | 32.4 | 98.1  |
| 2016    | 43.5 | 27.5 | 34.6 | 105.6 |
| 2017    | 16.0 | 11.9 | 46.4 | 74.2  |
| Average |      | 36.1 | 23.8 | 63.2  |

Notes:

<sup>1</sup> Timber harvest volume reported by calendar year, in million board feet (MMBF), and includes both sawlog and utility.

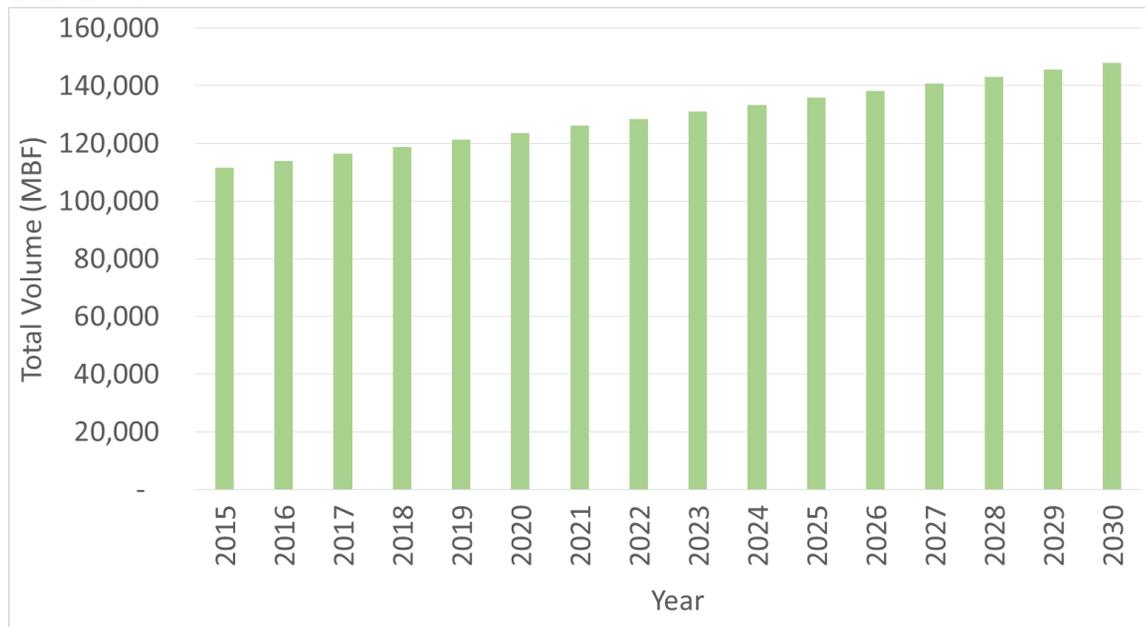
<sup>2</sup> State of Alaska includes Division of Forestry, Mental Health Trust, and University of Alaska Trust Lands.

<sup>3</sup> The relative increase in State harvest was an effort to provide additional timber to make up for a shortfall in supply from the Tongass.

<sup>4</sup> The relative drop in Tongass harvest in 2007 was the result of an injunction that stopped Tongass logging over most of the operating season.

Source: USDA Forest Service 2018a

Figure 3. Projected baseline timber harvest demand for Southeast Alaska forest product market, 2015-2030



Source: USDA Forest Service 2016

### Recreation based employment and contribution to the regional economy

Recreation and tourism-related employment is difficult to accurately quantify because visitors spend their money throughout the local economy. Recreation and tourism is not classified or measured as a standard industrial category. Components of travel and tourism activities are instead partially captured in other economic sectors, such as retail trade (e.g., grocery stores and gift shops), transportation, hotels and other lodging places, and amusement and recreation services. Information presented above for the visitor sector is considered generally representative of recreation and tourism-related employment in Southeast Alaska (see Table 2 and Figure 1).

According to the Alaska Department of Labor (DOL) (Bell 2015), visitor-related jobs in Southeast Alaska are concentrated in Juneau, Ketchikan, and Skagway, which together

accounted for more than three-quarters of the regional total in 2014. Transportation is the largest visitor-related economic sector in Southeast Alaska making up about one-third of visitor-related employment, with jobs ranging from whale watching boats, to tour buses, to airlines. The highest paying visitor-related occupations are also in the transportation sector, including captains and mates of water vessels (Bell 2015).

A separate study prepared on behalf of the Alaska Department of Commerce, Community, and Economic Development (DCCED) found that the visitor industry supported 11,925 jobs and \$445 million in labor income in Southeast Alaska from October 2016 through September 2017 based on direct visitor spending of \$705 million (McDowell Group 2018). These estimates are for total employment and labor income, meaning that they include workers employed directly by the visitor industry (direct jobs and income), as well as jobs and income supported elsewhere in the economy (indirect and induced jobs and income).<sup>3</sup> A separate estimate of direct employment developed from Alaska DOL and U.S. Census data identified a total of 7,739 direct jobs supported by the visitor industry in 2017 (Table 2).

### **Nature-Based Tourism**

A study prepared by the Institute of Social and Economic Research at the University of Alaska Anchorage provides insight into the contribution of nature-based tourism to the regional economy. This study, which involved field research conducted in the summers of 2005, 2006, and 2007, focused on a limited number of communities and sought to provide insight into revenues generated, the types of nature-based activities attracting tourists, and the resulting flows of money through the economy (Dugan et al. 2009). The findings of the study indicate that nature-based tourism generates substantial revenues in the region, with an estimated \$277 million generated in annual direct business revenues for the companies surveyed in Sitka, Juneau, Chichagof Island, Prince of Wales Island, Petersburg, and Wrangell (Dugan et al. 2009).

Dugan et al. (2009) also found that nature-based tourism takes a number of different forms and the ratio of cruise ship passengers to independent travelers varies by location. Most nature-based activities that originate in Ketchikan, for example, fell into four general categories: flightseeing, marine charters, adventure experiences, and general sightseeing. In all cases, the majority of clients participating in these activities were cruise ship passengers. Nature-based tourism on Chichagof Island, on the other hand, included a mix of cruise ship passengers and independent travelers, depending on the location and activity involved (Dugan et al. 2009). An estimated 1.2 million people visited Southeast Alaska in 2016, with most of these visitors (86 percent) arriving by cruise ship (McDowell Group 2017). Data on visitation trends of cruise ship visitors, from the DEIS (USDA Forest Service 2019; p 3-38) and other data on visitation trends for the state of Alaska from the McDowell Group (McDowell Group 2018a) shows demand for recreation in Southeast Alaska and the state is increasing.

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<sup>3</sup> Economic activity in one sector generates activity in others as firms purchase services and materials as inputs (termed “indirect” effects) and employees spend their earnings within the local economy (“induced” effects).

Another study, conducted on behalf of ADF&G, estimated that residents and visitors to Southeast Alaska spent \$363 million hunting and viewing wildlife in 2011, with visitors viewing wildlife accounting for an estimated 59 percent of this total (ECONorthwest 2014). Based on these estimated expenditures, the study estimated that hunting and wildlife viewing, respectively, supported 390 and 1,390 direct jobs and a combined total of \$107 million in labor income in Southeast Alaska in 2011, with additional indirect and induced jobs and income supported elsewhere in the economy (ECONorthwest 2014).

### **Recreation on the Tongass National Forest**

While it is reasonable to assume that the majority of visitor recreation and tourism activity in the region is related to the natural environment, not all of the activity generating this employment can be directly linked to the Tongass National Forest. Many visitors experience the Tongass from the deck of a cruise ship without directly using the forest for recreation purposes. In addition, while the Tongass includes approximately 80 percent of the land area in Southeast Alaska, there are other lands that offer wildland recreation opportunities in the region, including 3.3 million acres of National Park Service lands, and recreation lands managed by the State of Alaska. Further, other popular recreation and tourism activities, such as saltwater fishing, sea kayaking, and shopping, do not take place on the Tongass, although the forest may provide a backdrop for these activities.

The Alaska Region of the Forest Service (Region 10) has been participating in the Forest Service's National Visitor Use Monitoring (NVUM) program since 2000. Based on the results of the NVUM program for 2010 to 2014 and coefficients developed by White and Stynes (2010), the Forest Service (2017a) calculated a visitation estimate of 2,874,000 annual visits to the Tongass National Forest. The results of earlier surveys indicated that half of Alaska residents surveyed who live in Southeast Alaska reported using a boat or plane to access the national forest (White and Stynes 2010). Almost half (49.7 percent) of non-resident visits to the Tongass National Forest involved the use of a guide or outfitter at some point, with local cruises, wildlife viewing, and flightseeing reported most frequently. Alaska residents in contrast were found to very rarely use outfitters or guides (White and Stynes 2010).

Spending profiles were estimated for residents and non-residents visiting the Forest based on data compiled during the NVUM surveys. Using coefficients developed by White and Stynes (2010), the Forest Service (2017a) estimated that 2,874,000 annual visits generated about \$382 million in spending and supported 3,947 direct jobs and an additional 1,110 jobs elsewhere in the regional economy. This overall estimate is equivalent to about 42 percent of the regional visitor estimate developed for Alaska DCCED in 2017 (McDowell Group 2018), and the direct component is about 51 percent of the direct visitor jobs estimated by Southeast Conference (2018). Recreational visitors with an expectation of a remote experience would be most affected by timber production in Primitive, Semi Primitive Non-Motorized, and Semi Primitive Motorized settings. These are three of seven Recreation Opportunity Spectrum (ROS) categories described in the Cost-Benefit analysis below.

## **Commercial Fishing and Seafood Processing**

Data for the entire Southeast Alaska region on seafood production, seafood industry harvest and ex-vessel value from Alaska Department of Fish and Game is provided by the 2018 Southeast Conference report (Southeast Conference 2018). In 2017, an estimated 302 million pounds of seafood was harvested in Southeast Alaska with an ex-vessel value of \$289 million. Viewed in terms of value, salmon accounted for more than half (56 percent) of the total commercial catch in Southeast Alaska in 2017, with the remainder divided among black cod (16 percent), halibut (15 percent), crab (8 percent), herring (2 percent), and other (5 percent). Total pounds landed and ex-vessel values in 2017 were similar to regional 10-year averages, and a substantial improvement over the 2016 season, which was the worst in more than a decade (Southeast Conference 2018).

Employment in the seafood harvesting and processing sectors varies from year-to-year, but remains relatively stable compared to the fluctuations in the volumes and value of salmon harvested each year. Salmon harvesting employed an estimated 1,283 people in Southeast Alaska in 2016, with an additional 992 people employed harvesting other fish (Alaska DOL 2017). A further total of 1,400 people were employed in fish processing in 2016 for a combined total of 3,675 jobs (Alaska DOL 2016). Seafood harvesting and fish processing employment trends are shown for 2000 to 2013 in the 2016 Tongass Forest Plan Final Environmental Impact Statement (FEIS) (USDA Forest Service 2016).

Unlike other basic sectors of Southeast Alaska's economy, components of the seafood industry are spread throughout the region with an important presence in virtually every community. Seafood processing workers, for example, were employed in all of the boroughs in 2015, ranging from 10 workers in Skagway to 1,023 workers in Ketchikan Gateway Borough and 1,102 in Sitka (Alaska DOL 2016).

The seafood processing sector is generally characterized by high seasonality and low resident hire, as well as low hourly wages, with a median annual wage of \$24,689 in 2013 (Strong 2014). The industry does, however, have a number of higher paid occupations, including ship engineers, captains, mates, boat pilots, and general and operations managers, which accounted for just 1.2 percent total employment, but 6 percent of wages, with a median annual wage of \$66,720 (Strong 2014).

## **Mining and Mineral Development**

Mineral exploration and mining have been a part of life in Southeast Alaska for more than a century. Estimates developed using Alaska DOL data found that a total of 886 workers were employed in the mining sector in Southeast Alaska in 2017 (Table 2). According to a recent economic impact study prepared for Alaska's mining industry, the Greens Creek and Kensington mines employed 414 workers and 325 workers in 2016, respectively, with the Kensington Mine employing an additional 90 contractors (McDowell Group 2018b). Mining jobs are the highest-paying jobs in the region, with annual wages of \$102,000 in 2017 (Southeast Conference 2018). The high wages in this sector reflect the skilled nature of the job, as well as the demands of working in remote locations (Abrahamson 2013). Mining employment in Southeast Alaska increased in 2017, up 11 percent from the preceding year, with the region's two large mines

(Greens Creek and Kensington) accounting for the majority of this employment. Despite increasing employment, production dropped at both mines in 2017 (Southeast Conference 2018).

Both the Greens Creek and Kensington mines are located in the City and Borough of Juneau, mostly on Tongass NFS lands. Greens Creek Mine is a primary silver mine located on Admiralty Island; Kensington Mine is a gold mine located on the mainland approximately 45 miles north of Juneau. Alaska residents make up about two-thirds of the total labor force at each mine, 66 percent at Greens Creek and 67 percent at Kensington. Alaska resident employees of both mines live throughout the region. More than two-thirds of Greens Creek's Alaska resident employees live in Juneau. The other third live in other Southeast Alaska communities or elsewhere in the region (McDowell Group 2018).

Two proposed underground mine projects on NFS lands on Prince of Wales Island received approval for financial assistance through the Alaska Industrial Development and Export Authority in June 2014 (Bradner 2014). Senate Bill 99 authorized \$145 million and \$125 million in infrastructure and construction financing, respectively, for the proposed Bokan Mountain and Niblack projects. The Bokan Mountain project is a rare earths mine that would include on-site ore processing facilities. The McDowell Group (2013) in a study prepared for the Bokan Mountain project estimated that construction of the project would last 2 years and employ an average construction workforce of 200, with peak employment potentially reaching 300 workers. Operation would be expected to employ 190 workers with approximately \$18 million in annual payroll (McDowell Group 2013). The Niblack Project is a proposed underground copper-gold-zinc-silver mine. The project owners estimate that the construction and operation phases of the project would both employ approximately 200 workers (Niblack Project LLC 2015). No exploration activity was reported for either project in 2016 and 2017 (McDowell Group 2018).

## **COST-BENEFIT ANALYSIS**

Benefits and costs are divided into two parts: 1) those which are realized by any organization or individual, and 2) those realized by the Forest Service. Financial considerations include revenues and costs from the perspective of the Forest Service or other government agencies. Other benefits and costs can be realized by users of roadless areas in NFs, including backpackers, hunters, viewers of wildlife, permitted outfitters and guides, timber processors, and water users. Other benefits and costs can also be realized by those who never set foot in roadless areas and/or who desire the retention of wildland characteristics for their children.

The word "value" can have a variety of meanings. In one sense, value can mean that which is desirable or worthy for its own sake. In another, value can mean a fair or equivalent in terms of money or commodities (Freeman, 2003). Economics considers value in the latter sense, using tradeoffs to determine the "equivalence." Often these values and tradeoffs are expressed in monetary terms. At other times where monetary expressions are not available, value and tradeoffs are considered in qualitative terms. Executive Order 13563 recognizes that a quantifiable analysis is not always possible, but must include a reasoned determination that the benefits justify the regulatory costs. In the sections below under Findings (*Analysis of Roadless Area Characteristics, Potential Impacts by Resource Area* and *Agency Costs including Control*

*of Regulatory Costs*) values are discussed qualitatively. The final section on *Agency Costs including Control of Regulatory Costs* includes discussion of E.O. 13771.

#### *General Assumptions*

This analysis compares the benefits and costs associated with the proposed rule (Alternative 6). According to Office of Management and Budget (OMB) direction, the benefits and costs of proposed regulations and Forest Service directives must be compared or measured against a baseline. The baseline, applies to the provisions of the 2001 Roadless Rule to inventoried roadless areas under the No Action Alternative discussed as Alternative 1 in the Draft Environmental Impact Statement (DEIS) (USDA Forest Service 2019).

The cost benefit analysis discusses benefits and costs that are not readily quantifiable, but demonstrate benefits, costs and efficiencies gained from the proposed rule (Alternative 6). The potential benefits and costs are dependent on local conditions and the complexity and nature of issues associated with future decisions that are unknown and difficult to predict. Many benefits and costs are therefore not quantified, but discussed in a qualitative manner for the baseline 2001 Roadless Rule, proposed rule and other regulatory alternatives below. An analysis of cost savings to the timber industry and recreation related displacement is provided in the cost-benefit discussion below.

As discussed in the introduction above, the types of benefits derived from uses of roadless areas in Alaska are far ranging and include a number of non-market and non-use benefit categories. The section on *Analysis of Roadless Area Characteristics* provides this detail. The section below on *Potential Impacts by Resource Area* provides detail on market values related to affected resource areas. Lastly there is a section on *Agency Costs including Control of Regulatory Costs*. Table 5 summarizes the environmental consequences, for both market and non-market categories, for each alternative in a comparative format. The seven categories in bold type below are used for the qualitative ratings in Table 5 as follows (from most adverse to most beneficial):

- Substantial Adverse Effect
- **Moderate Adverse Effect**
- **Minimal Adverse Effect**
- **Very Minimal Adverse Effect**
- **Neutral/No Effect**
- **Very Minimal Beneficial Effect**
- **Minimal Beneficial Effect**
- **Moderate Beneficial Effect**
- Substantial Beneficial Effect

The proposed rule is programmatic and does not directly authorize any ground-disturbing activities. Ground-disturbing activities may occur in areas formerly designated as IRAs and are considered as indirect effects. Before authorizing a land-use activity, the Forest Service must complete a site-specific environmental analysis, pursuant to NEPA and its implementing regulations. When a specific project or activity is proposed on NFS land, the Forest Service conducts site-specific analyses of the effects associated with that project or activity and makes a

decision that authorizes implementation of that project or activity (this requirement exists under all regulatory alternatives including the baseline 2001 Roadless Rule). Ground disturbing activities covered by NEPA would adhere to the Tongass Forest Plan and would be consistent with the goals, objectives, management prescriptions, standards, guidelines, projected timber sale quantity, projected wood sale quantity, and young-growth transition strategy. This includes standards and guidelines for non-timber resources, for example riparian management standards and guidelines which provide protection for fisheries with subsistence and commercial importance. All timber harvest, including harvest in areas formerly designated as inventoried roadless areas, would be compelled to adhere to these resource standards and guidelines (fisheries, water quality, air, recreation, etc.), thus providing continuation of 2016 Forest Plan protections under all the regulatory alternatives. Regardless these activities would have indirect effects on roadless area characteristics and are discussed below.

Table 5. Qualitative comparison of the Alternatives

| Resource/Category  | Alternative        |                                |                                |   |                            | Proposed Rule              |
|--|--------------------|--------------------------------|--------------------------------|---|----------------------------|----------------------------|
|  | Baseline           | 2                              | 3                              | 4   | 5                          |                            |
|  | 2001 Roadless Rule | Roaded Roadless Alternative    | Logical Extension Alternative  | Partial Dev LUDs <sup>1</sup> Alternative | All Dev LUDs Alternative   |                            |
| <b>Analysis of Roadless Area Characteristics</b>   |                    |                                |                                |   |                            |                            |
| Overall Protection of Roadless Characteristics on the Tongass                              | Neutral/No Effect  | Neutral/No Effect              | Very Minimal Adverse Effect    | Minimal Adverse Effect                    | Moderate Adverse Effect    | Moderate Adverse Effect    |
| <b>Potential Impacts by Resource Area</b>  |                    |                                |                                |   |                            |                            |
| Forest Products  | Neutral/No Effect  | Very Minimal Beneficial Effect | Minimal Beneficial Effect      | Minimal Beneficial Effect                 | Minimal Beneficial Effect  | Minimal Beneficial Effect  |
| Recreation/Tourism (Visitor) Industry Employment   | Neutral/No Effect  | Neutral/No Effect              | Very Minimal Adverse Effect    | Minimal Adverse Effect                    | Minimal Adverse Effect     | Minimal Adverse Effect     |
| Fisheries Employment   | Neutral/No Effect  | Neutral/No Effect              | Neutral/No Change              | Neutral/No Change                         | Neutral/No Change          | Neutral/No Change          |
| <b>Minerals Development Potential</b>  |                    |                                |                                |   |                            |                            |
| Locatable  | Neutral/No Effect  | Neutral/No Effect              | Neutral/No Effect              | Neutral/No Effect                         | Neutral/No Effect          | Neutral/No Effect          |
| Leasable   | Neutral/No Effect  | Very Minimal Beneficial Effect | Very Minimal Beneficial Effect | Moderate Beneficial Effect                | Moderate Beneficial Effect | Moderate Beneficial Effect |
| Infrastructure: Renewable Energy Project Development Potential                             | Neutral/No Effect  | Minimal Beneficial Effect      | Minimal Beneficial Effect      | Minimal Beneficial Effect                 | Minimal Beneficial Effect  | Minimal Beneficial Effect  |
| Infrastructure: Potential for Development of State Roads and Other Transportation Projects | Neutral/No Effect  | Minimal Beneficial Effect      | Minimal Beneficial Effect      | Moderate Beneficial Effect                | Moderate Beneficial Effect | Moderate Beneficial Effect |
| Alaska Native Customary and Traditional Uses   | Neutral/No Effect  | Minimal Beneficial Effect      | Minimal Beneficial Effect      | Minimal Beneficial Effect                 | Minimal Beneficial Effect  | Minimal Beneficial Effect  |

| Resource/Category | Alternative                            |  |  |   |  |  |
|-------------------|--|--|--|---|--|--|
|                   | Baseline                               | 2                                      | 3                                      | 4   | 5                                      | Proposed Rule                          |
|                   | 2001 Roadless Rule                     | Roaded Roadless Alternative            | Logical Extension Alternative          | Partial Dev LUDs <sup>1</sup> Alternative | All Dev LUDs Alternative               | Full Exemption Alternative             |
| Subsistence       | Minimal Adverse and Beneficial Effects    | Minimal Adverse and Beneficial Effects | Minimal Adverse and Beneficial Effects |

**Analysis of Roadless Area Characteristics**

Roadless areas are important because of their wildlife and fish habitat, recreation values, importance to multiple economic sectors, inherent passive use values, traditional properties and sacred sites for local indigenous people, and ecosystem service values they provide (USDA Forest Service 2019). Under the 2016 Forest Plan, timber management activities are governed by a number of rules and regulations designed to protect or mitigate adverse impacts to natural resources that provide ecosystem services. This is discussed further in the 2008 Forest Plan EIS (USDA Forest Service 2008, pp. 3-553 to 3-556). 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. These values represent the value that 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.

The values considered under roadless characteristics include remoteness, scenic quality, traditional cultural areas and sacred sites, reference landscapes, and other locally-unique characteristics. The current condition of most roadless areas on the Tongass is nearly pristine relative to these values. Exceptions include the roaded roadless areas, where previous road development and timber harvest has taken place and localized areas along the shoreline where historic development has occurred or localized areas where mining-related activities have occurred. This section first provides findings specific to the proposed rule (Alternative 6) and then provides a comparison of the proposed rule to the baseline 2001 Roadless Rule and other regulatory alternatives for the values considered under roadless characteristics (scenic quality, recreation opportunities, traditional cultural properties and sacred sites, and other locally identified unique characteristics). Analysis of values assumes indirect effects from ground disturbing activities, including timber harvest, occurs.

**Analysis of Roadless Characteristics under the Proposed Rule**

Under the proposed rule, all 9.2 million acres of roadless area acres would be removed with an estimated net increase of about 165,000 acres of suitable old growth available for harvest. As depicted in the first row of Table 5: with the most adverse effects across the regulatory alternatives to “Overall Protection of Roadless Characteristics” and the same as Alternative 5 (Table 5).

Alternatives 2 and 3, would remove “roaded roadless” areas. In addition, areas adjacent to

existing road and harvest systems would also be removed from roadless protection. These adjacent areas, considered “logical extensions” of the existing road and harvest systems within the same watersheds, would convert 50,000 acres of previously unsuitable lands to suitable old-growth lands that would be available for harvest. In addition, the removal of roaded roadless alongside the addition of logical extension acres (along with ownership changes and updated mapping) would result in a net increase of about 76,000 acres of suitable old-growth lands that would be available for harvest.

The areas removed from roadless protection under Alternative 4 would produce about 70,000 acres of suitable old-growth lands that would be available for harvest. In addition, the Timber Priority roadless category (see description above) would result in the conversion of about 88,000 acres of previously unsuitable lands to suitable old-growth lands that would be available for harvest, resulting in an increase of 158,000 acres of suitable old growth. Additions to roadless protection under the proposed rule include the LUD II acres not designated as roadless in 2001.

The projected harvest on these suitable acres, under Alternatives 3 and 4 would be about 10,500 and 17,000 acres over 100 years (assuming a uniform distribution of the projected old-growth harvest over all suitable old-growth lands), respectively. Harvest in these areas would affect roadless characteristics that are presently protected under the baseline 2001 Roadless Rule.

As depicted in the first row of Table 5 the baseline 2001 Roadless Rule and Alternative 2 result in no adverse effects (Neutral/No Effect) to “Overall Protection of Roadless Characteristics” and the values they provide to multiple economic sectors, inherent passive use values, traditional properties and sacred sites for local indigenous people, and ecosystem services. Changes under Alternatives 3 and 4 would result in very minimal and minimal adverse effects, respectively to “Overall Protection of Roadless Characteristics” and the values they provide. While more adverse than the baseline 2001 Roadless Rule and Alternative 2 (Neutral/No Effect) adverse effects under Alternatives 3 and 4 are less than Alternatives 5 (operation subject to requirements under the 2016 Forest Plan) and the proposed rule (moderate adverse effects). Detail on effects to the values considered under roadless characteristics (scenic quality, recreation opportunities, traditional cultural properties and sacred sites, and other locally identified unique characteristics) are provided below.

### **Scenic Quality**

The Tongass NF offers a variety of high-quality scenery to its visitors, from spectacular mountain ranges and glaciers to low-lying marine landscapes composed of intricate waterways, bays, and island groups. Scenic quality is based on two definable elements, landscape character and scenic integrity. Tongass roadless areas have natural appearing landscapes and have very high scenic integrity and generally have high value for landscape character as well. The exception for scenic integrity is the roaded roadless areas, which have significantly reduced scenic integrity because of past harvest and road construction. Roadless areas are viewed from a variety of vantage points, including the communities of Southeast Alaska, the Alaska Marine Highway ferry route, cruise ship routes, existing road systems, popular small boat routes and anchorages, small aircraft, and hiking trails.

Road construction and timber harvest can have varying degrees of adverse effects on the scenic integrity of a landscape. In most studied viewsheds, the highest effects on scenery would be associated with Alternatives 5 and the proposed rule, followed in order by Alternative 4, Alternative 3, Alternative 2, and the baseline 2001 Roadless Rule. In addition, the proposed rule and Alternatives 4 and 5 would likely result in more road development to reach more remote places, which would have a greater adverse effect on scenery than with less road development under Alternative 3, under the baseline 2001 Roadless Rule and Alternative 2. Road mileage differences, however, would not be large, because all regulatory alternatives would have the same level of harvest.

### **Recreation Opportunities**

Roadless areas provide recreation opportunity due to the variety of primitive, semi-primitive motorized, and semi-primitive non-motorized Recreation Opportunity Spectrum (ROS) classes of dispersed recreation. Approximately 95 percent of the 2001 roadless areas on the Tongass consist of primitive and semi-primitive ROS classes, and almost two-thirds of these are primitive. The ROS system portrays the combination of activities, settings, and experience expectations along a continuum that ranges from highly modified to primitive environments. The following seven classifications are identified along this continuum from most to least developed:

- Urban
- Rural
- Roaded Modified
- Roaded Natural
- Semi-Primitive Motorized
- Semi-Primitive Non-Motorized
- Primitive

The setting indicators and applicable standards and guidelines for the seven ROS classes are described in Appendix I to the 2016 Tongass Forest Plan (USDA Forest Service 2016).

Under Alternative 2, roaded roadless and other substantially altered areas would lose protection as roadless. These newly unprotected areas would provide 17,700 acres of suitable old growth and 10,300 acres of suitable young growth and they are 64 percent Roaded Modified and Roaded Natural and 35 percent semi-primitive ROS classes. Under Alternative 2 approximately 95 percent of Tongass roadless areas would be maintained as primitive and semi-primitive ROS classes.

Under Alternatives 3 and 4, approximately 96 percent of the roadless areas on the Tongass would be maintained as primitive and semi-primitive ROS classes. The net changes in roadless designations under these two alternatives would provide 75,700 and 158,400 acres of suitable old growth and 13,900 and 14,600 acres of suitable young growth, respectively. Under Alternative 5 the remaining roadless areas would maintain approximately 98 percent of their areas as primitive and semi-primitive ROS classes and the net change in roadless designation would provide 165,400 acres of suitable old growth and 16,600 acres of suitable young growth. Under the proposed rule (Alternative 6), all roadless designations would be removed. The areas removed from roadless designation would provide 165,400 acres of suitable old growth and 19,900 acres of suitable young growth. Under all other regulatory alternatives, the retained roadless areas

would remain similar in terms of their ROS allocations. The exception would be the proposed rule, which would include no retained roadless designations.

Similarly, outfitter-guide use on the Tongass includes activities in more remote areas. The majority of these areas would be retained as roadless under the baseline 2001 Roadless Rule and Alternatives 2 and 3. Substantially more lands in the primitive ROS class would be removed under Alternatives 4, 5 and the proposed rule.

### **Traditional Cultural Properties and Sacred Sites**

The proposed rule and other regulatory alternatives require compliance with existing laws and regulations; therefore, before any management actions take place, the standard process for considering effects would be conducted as required by the implementing regulations for the National Historic Preservation Act and other relevant law, policy, and guidance provided in agreement documents. Consideration of effects would occur on a site specific basis if projects were proposed in areas of historic importance. In most cases impacts would be avoided or mitigated. Tribal consultation is an integral part of the planning process for management actions; as well as consultations with the State Historic Preservation Officer and other interested parties.

For cultural resources, including historic and traditional cultural properties/heritage sites, prior to management actions taking place on the ground under the proposed rule and other regulatory alternatives, resource inventories and appropriate mitigation are required by law. Increasing risk to cultural resources may occur under the proposed rule and Alternatives 4 and 5 because of potentially greater road lengths and potential activity in areas currently and previously protected from development, associated with harvest activities.

### **Locally Identified Unique Characteristics**

A range of distinctive characteristics occur within the Tongass roadless areas. Many of these are already identified in the Forest Plan and managed as Special Interest Areas. These include Geological Areas, Recreation Areas, Zoological Areas, Botanical Areas, Cultural Areas, and Scenic Areas. Special Interest Areas cover 184,000 acres within 2001 inventoried roadless areas. In addition, a number of Research Natural Areas occur within the Tongass roadless areas (21,000 acres). The Research Natural Areas, along with some of the Special Interest Areas, serve as reference landscapes. Further, a number of river corridors are managed under the Forest Plan as wild and scenic rivers. Within 2001 inventoried roadless areas, there are 13,000 acres of Recreational River, 15,000 acres of Scenic River, and 40,000 acres of Wild River. Finally, there are other small areas, not included within these special LUDs, such as areas with unique karst features that occur within roadless areas.

Altogether, these special LUDs cover 273,000 acres within 2001 inventoried roadless areas (the baseline 2001 Roadless Rule). Under Alternative 2, these acres would actually increase slightly to 275,000 acres, and there would be little change under Alternatives 3, 4 and 5 at 270,000 acres, 268,000 acres, and 272,000 acres, respectively. However, under the proposed rule (Alternative 6), the roadless acreage within these special LUDs would decrease to zero.

### ***Potential Impacts by Resource Area***

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The proposed rule and regulatory alternatives have implications for specific places on the Forest used by various communities. They also have potential implications for resource dependent industries, infrastructure development, Alaska Native customary and traditional uses, and the availability of subsistence resources.

The proposed rule and regulatory alternatives are programmatic, meaning that they establish direction and allowable activities for broad land areas, rather than schedule specific activities in specific locations. This makes it difficult to predict effects on individual communities. This is a common source of frustration to local residents, who want to know exactly how they and the places they care about could be affected. While many potentially affected outputs of forest management, such as scheduled timber harvest, generally translate into social and economic activity, such as employment in the timber industry, it is difficult to predict which communities would benefit the most from that activity. Forest Service activities provide economic opportunities to the private sector. How that sector and the various industries that comprise it respond depends on many variables in addition to Forest Service management. Communities that rely on a given resource-related industry would, however, be expected to be the first to benefit or lose from significant changes in planned output levels affecting that industry.

### **Forest Products**

Analysis of harvest costs savings under the proposed rule (and Alternatives 2 through 5) indicate approximately \$1 to \$2 million dollars in harvest cost savings would be provided as a result of improved flexibility to the timber industry (USDA Forest Service 2019b). The proposed rule and Alternatives 2 through 5 would all increase the suitable acres available for harvest, with the potential to provide additional opportunities for the Forest Service to develop economic timber sale offerings. Suitable acres would be added in three broad categories or areas: areas that have been substantially altered as identified by known prior road construction or timber harvest<sup>4</sup> (the proposed rule and Alternatives 2 through 5); logical extension areas (the proposed rule and Alternatives 3, 4 and 5); and areas more distant from roads (the proposed rule and Alternatives 4 and 5). In addition, suitable old-growth acres would be added in Community Priority ARAs (Alternative 3). The added suitable acres in areas where roads already exist (roaded roadless) or could be logically extended (logical extensions) are generally considered relatively economic to harvest. Acres identified as more distant from roads are likely to be more expensive to harvest and less likely to be accessed for timber production under the current Forest Plan.

In practice, many factors can influence the cost of timber harvest, adding economic risks for potential purchasers and affecting the ability of the Forest Service to offer timber sales. Road construction, helicopter yarding, complex silvicultural prescriptions, setting size, and other factors may increase costs, which then decrease the value of the offering. The value of the timber offered must be sufficient to cover costs and include profit for the purchaser. Under the Consolidated Appropriations Act, 2018, timber sales that do not appraise positive using the

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<sup>4</sup> Removed areas include both development and non-development LUDs. These areas are generally known as “roaded roadless” areas but also include additional areas considered to be substantially altered.

current Region 10 RV (Residual Value) appraisal cannot be offered (USDA Forest Service 2019). Estimated costs per thousand board feet vary substantially across the Forest. Transportation infrastructure costs and haul distances are typically higher in more remote areas, i.e., those areas that are further from existing infrastructure and markets. Market in this context may include a mill or export yard.

The Record of Decision for the 2016 Forest Plan estimated that a total of approximately 24,000 old-growth acres would be harvested Forest-wide after 25 years, with a total of 42,500 old-growth acres harvested after 100 years (USDA Forest Service 2016a). These estimates represent an approximate upper ceiling of the number of roadless acres that could be potentially harvested under any of the regulatory alternatives. The 2016 Forest Plan FEIS (USDA Forest Service 2016) estimated that approximately 5 MMBF of small and micro-sales of old-growth timber is required each year to meet the needs of existing small old-growth mills that produce high value products such as appearance grade lumber and cedar shingles. This annual small and micro-sale demand (5 MMBF) is anticipated to be met for the duration of the planning period under all of the regulatory alternatives, including the baseline 2001 Roadless Rule.

For larger sales, more acres of suitable old-growth land would allow the Forest Service greater flexibility in the selection of future timber sale areas, as well as the potential for more flexibility in sale design, depending on the planning areas selected. This improved flexibility could, in turn, potentially improve the Forest Service's ability to offer economic sales that meet the needs of industry. This greater flexibility could be especially beneficial during the first two decades of the 2016 Forest Plan (the transition period), when most old-growth harvest would take place. While many factors can influence the cost of timber harvest, as noted above, areas along existing roads are typically more economically efficient, followed by areas where existing roads can be easily extended. Transportation infrastructure costs can include road construction, reconditioning, reconstruction, and maintenance, as well as log transfer facility development. Road construction, reconditioning, reconstruction, and maintenance involve substantial costs and have the potential to strongly influence timber sale economics.

Areas closer to markets, either a mill or export facility, are also more likely to offer more economic timber sale options. Existing old-growth mills in Southeast Alaska are primarily located in the south part of the region, with a concentration of mills, including the last remaining medium-sized mill (Viking Lumber), on Prince of Wales Island. Sales on the south part of the Forest are, therefore, more likely to appraise positive. In cases where the Regional Forester allows 100 percent export, which is permissible on a case-by-case basis (as discussed above), proximity to an export facility may also result in sales being more likely to appraise positive.

Forest level data on cost of harvest (felling, yarding, loading etc.) are used to examine costs with and without roadless restrictions. In 2011 the federal court (District of Alaska) set aside the Tongass NF's exemption and reinstated the 2001 Roadless Rule on the Tongass NF. Cost per thousand board feet (MBF) in the 8 years before and after 2011 provide a useful means for comparison. In the period during the exemption (2003 to 2010) the average cost per MBF

harvested was \$220 while the average cost was \$265<sup>5</sup> per MBF over the period when roadless restrictions were in place (2011 to 2018) (USDA Forest Service 2019b).

Applying these cost averages to the regulatory alternatives provides a frame of reference for the comparing the regulatory alternatives. As stated previously projected harvest levels are not expected to be different under any of the regulatory alternatives. Timber harvest levels on the Tongass NF are set by the 2016 Forest Plan (USDA Forest Service 2016) as assessed by continual timber demand monitoring, and provide an upper-bound or ceiling (46 MMBF) for estimating cost savings. This upper-bound or ceiling of 46 MMBF, is set forth by the 2016 Forest Plan, and is a projection of future demand. This includes the agency's responsibilities under the Tongass Timber Reform Act, which directs the Forest Service to seek to provide a supply of timber from the Tongass National Forest that meets annual market demand and the market demand for each planning cycle to the extent consistent with providing for the multiple-use and sustained-yield of all renewable resources and other applicable requirements, including NFMA. Applying cost averages before and after the federal court decision in 2011 (\$220 and \$265 per MBF, respectively) indicates the proposed rule and Alternatives 2 through 5 could provide approximately \$2 million dollars in annual savings at the harvest ceiling of 46 MMBF under the 2016 Forest Plan FEIS.

In addition, a lower-bound estimate of cost savings is provided to address uncertainty and for comparison to costs of potentially displaced recreationist. Average annual timber harvest on the Tongass NF over the 16 years depicted in Table 4 is 36 MMBF; in any given year harvest may be different than the average. In the interest of estimating a lower-bound of cost savings one standard deviation (12 MMBF) is subtracted from the average timber harvest for a lower-bound estimate of average timber harvest (24 MMBF). In addition, using average annual harvest reflects harvest levels under the 2016 Forest Plan and 2008 Forest Plan. Applying cost averages before and after the federal court decision in 2011 (\$220 and \$265 per MBF, respectively) indicates the proposed rule and Alternatives 2 through 5 could provide approximately \$1 million dollars in annual savings at the lower-bound harvest estimate of 24 MMBF. Thus from \$1 to \$2 million dollars in cost savings would be provided as a result of improved flexibility under the proposed rule and Alternatives 2 through 5. The lower- and upper-bound cost savings are discounted (over a 20 year period at a 3 and 7 percent discount rate) and compared to costs of potentially displaced recreationist in Table 6 below.

### **Recreation and Tourism**

Changes in land management have the potential to affect recreation opportunities on the Forest. Impacts could occur where timber management and development activities conflict with recreation opportunities for community residents and/or commercial recreation operators and their clients. Changes in suitable old-growth and young-growth acres for harvest provide an indicator of potential displacement of recreationists interested in primitive recreation experiences. For some recreation uses, additional development for timber harvest and other

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<sup>5</sup> Average costs for both periods were deflated to 2019 dollars prior to averaging.

infrastructure could provide increased access to the Forest and more opportunities.

A range of potential lost revenue to outfitter and guides (approximately \$77,000 per year) and across all recreation related industry in Southeast Alaska (\$319,000 per year, includes outfitters and guide expenditures) is estimated under the proposed rule (and Alternatives 2 through 5). These estimates provide an upper-bound ceiling for consideration of potential lost revenue, alongside cost savings to the timber industry, and should not be used as precise estimates of roadless area visitor expenditures or losses. Expenses incurred by visitors are not necessarily lost but subject to displacement related changes. While some businesses may lose revenues, if visitors choose not to travel to Southeast Alaska, others may see increases in revenues if visitors choose to stay longer or travel to substitute sites within Southeast Alaska. Detailed explanation and sources for this analysis is provided below.

Information from the NVUM survey data on the type of site visited by recreationists on the Tongass NF indicates general forest area visits made up 64 percent of all forest site visits or 1.8 million visits annually. General forest area visits include IRA visitation since they do not include day use developed sites, overnight use developed sites or wilderness visits. The existing 110 IRAs on the Tongass cover 9.2 million acres which is 55 percent of the forest outside of wilderness. Developed areas cover about 1.3 million acres (about 8 percent), wilderness covers about 5.9 million acres (35 percent); leaving 2 percent of the remaining forest area classified as other general forest area. Visitation in IRAs and other general forest area visits rely upon access routes and thus the assumption that general forest area visits are evenly distributed on a per acre basis is an overestimate of IRA visitation. However this provides an upper-bound estimate useful for analysis of cost related to displacement from timber harvest.

Although the alternatives would vary in terms of the amount and location of acres suitable for timber harvest, the total volumes expected to be harvested would be the same under each regulatory alternative. The Record of Decision for the 2016 Forest Plan estimated that a total of approximately 24,000 old-growth acres would be harvested Forest-wide after 25 years, with a total of 42,500 old-growth acres harvested after 100 years. Using the same assumptions for young growth, an estimated 284,000 acres of young growth would be harvested over 100 years (USDA Forest Service 2016). These estimates represent an approximate upper-bound of roadless acres that could be potentially harvested under any of the regulatory alternatives (USDA Forest Service 2019) and provide a per acre basis for measuring potential displacement of IRA visitors.

Young- and old-growth harvest acreages need to be converted to annual averages in order to estimate potential displacement of IRA visitors. As a conservative upper-bound the annual average of the 25 year old growth estimate ( $24,000 \text{ acres} / 25 \text{ years} = 960 \text{ acres per year}$ ) is added to the annual average of the 100 year young growth estimate ( $284,000 \text{ acres} / 100 \text{ years} = 2,840 \text{ acres per year}$ ) to estimate average annual disturbance due to harvest (3,800 acres). In any given year the annual harvest is likely to be less than or greater than the annual average over the 25 or 100 year periods, thus the estimate of disturbance is tripled (12,000) which is also half the suitable old-growth acres anticipated to be harvested forest-wide after 25 years. Weighting the average annual harvest using the 25 year old growth estimate makes sense since the old-growth contribution to harvest is expected to start out high and decrease over time as more young growth

becomes economic to harvest (USDA Forest Service 2019). Of the 1.8 million IRA visitors across 9.2 million acres of IRAs, approximately 2,400 visitors may be displaced due to annual harvest of suitable young- and old-growth, assuming that the 1.8 million general forest area visitors and harvest locations are both evenly distributed over IRAs. Thus, the estimate of displacement is approximately a tenth of one percent of average annual IRA forest visitation or general forest area visits (1.8 million visits) and not expected to affect overall increasing recreation demand to Southeast Alaska, which in large part are driven by cruise ship trends (McDowell Group 2017).

Total annual spending or costs related to all recreation visitation on the Tongass is \$382 million (USDA Forest Service 2017). Not all of this spending is due to IRA visitation and includes wilderness and other visits to developed sites. Estimated spending is based on NVUM sampling across 10 cost categories:

- Motels
- Campgrounds
- Restaurants
- Groceries
- Gas & oil
- Other transportation expenses
- Entry fees
- Recreation & entertainment
- Sporting goods
- Souvenirs and other expenses

Spending in these cost categories are sampled across the type of trip (local or non-local visitors who are on day trips or staying overnight on and off the forest). After separating economic survey responses into these trip-types and excluding outliers and contaminants, sample sizes are too small at the forest level to reliably estimate spending averages for each trip-type on individual national forests; so the Tongass NF annual spending estimate (\$382 million) is based on these national averages. However visitor spending can differ from place to place with differences in local spending opportunities and local prices. To account for these differences trip-types spending profiles are available for forest with below-average, average and above-average spending. Thus total spending is also based on the Tongass' classification as an average spending forest. Total spending across the forest by all visitors is proportional to IRA visitors if we assume the distribution of the type of trip taken by IRA visitors is the same as the rest of the forest. Thus total expenditure for all estimated IRA visitors are approximately \$245 million; while approximately \$319,000 by the 2,400 visitors potentially displaced under the estimate of annual harvest of suitable young- and old-growth; this assumes that the 1.8 million general forest area visitors and harvest locations are both evenly distributed over IRAs. These estimates should not be used as precise estimates of IRA visitor expenditures.

Not all recreation related costs associated with IRA visitation are expected to increase with potential displacement due to harvest. For example, expenses on grocery stores, restaurants and hotels may vary spatially (if visitors visit other areas of Southeast Alaska) but total expenses in

these categories are more related to length of stay which is not expected to vary with displacement. Three of the NVUM cost categories above may change with displacement as they are directly related to travel and guide related expenses: gas and oil; local transportation costs (bus, shuttles etc.); and recreation and entertainment (which include guide fees, equipment rental). Other costs are not likely to change with displacement of IRA visitors. Together these three displacement related cost categories make up 24 percent of recreation expenditures (White 2017). Since these expenses include some costs not associated with spatial or temporal displacement (e.g., equipment rental), and cannot be distinguished from NVUM survey data, this cost estimate can be considered an upper-bound or ceiling. Further displacement may result in a reduction in costs since substitute sites may be closer than the unavailable site, reducing travel distance and costs; thus the cost estimate may be a conservative upper-bound or ceiling. Considering these three displacement related cost categories, the estimate of lost revenue associated with potential displacement of IRA visitors is estimated to be \$77,000. These estimates should not be used as precise estimates of IRA visitor expenditures. Expenses incurred by visitors are not necessarily lost but subject to displacement related changes. While some businesses may lose revenues, if visitors choose not to travel to Southeast Alaska, others may see increases in revenues if visitors choose to stay longer or travel to substitute sites within Southeast Alaska. These cost savings are discounted (over a 20 year period at a 3 and 7 percent discount rate) and compared to timber industry cost savings in Table 6 below. Table 5 and the recreation discussion above, under the section *Analysis of Roadless Area Characteristics*, provides effects related to the non-market value of the recreation experience under the proposed rule and other regulatory alternatives.

### **Commercial Fisheries**

The proposed rule and other regulatory alternatives are not expected to have a significant change to the commercial fishing or fish-processing industries over the planning period, provided the 2016 Forest Plan protections remain in place. Riparian Management standards and guidelines established in the 2016 Forest Plan (USDA Forest Service 2016) would remain in place under the proposed rule and all of the regulatory alternatives. While there would be some variation in the level of protection, these variations are not expected to affect the fishing industry. The future of the fishing industry in Southeast Alaska is more likely to depend upon occurrences outside of the Tongass NF such as hatchery production, offshore harvest levels, and changes in ocean conditions.

The absence of an effect due to the proposed rule and regulatory alternatives is based on the conclusion from the 1997 FEIS (USDA Forest Service 1997); which noted that the amount of acreage of timber harvest was at most less than 20,000 acres per year, representing approximately 0.5 percent of the total remaining productive old growth (or 5 percent over the next decade) and less than 0.02 percent of the entire Forest. That EIS concluded that this was not expected to result in a significant change to commercial fishing. The proposed rule and other regulatory alternatives would allow considerably less timber harvest and new road construction than the alternatives evaluated in the 1997 FEIS. Total annual old-growth harvest allowed over the 100-year planning period would be approximately 42,500 acres, substantially lower than the maximum proposed in the 1997 FEIS.

Table 6. Net-Present Value of discounted (over 20 years) timber industry cost-saving and potential costs associated with recreation displacement under the regulatory alternatives

| Industry   | Alternatives       |                             |                               |                              |                          |                            |
|--|--------------------|-----------------------------|-------------------------------|------------------------------|--------------------------|----------------------------|
|  | Baseline           | 2                           | 3                             | 4                            | 5                        | Proposed Rule              |
|  | 2001 Roadless Rule | Roaded Roadless Alternative | Logical Extension Alternative | Partial Dev LUDs Alternative | All Dev LUDs Alternative | Full Exemption Alternative |
| <b>Forest Product Industry - cost savings</b>      |                    |                             |                               |                              |                          |                            |
| Upper-bound <sup>1</sup> – 46 MMBF harvest ceiling | \$0                | \$91,000,000                | \$91,000,000                  | \$91,000,000                 | \$91,000,000             | \$91,000,000               |
| Lower-bound <sup>2</sup> – 24 MMBF <sup>3</sup>    | \$0                | \$30,000,000                | \$30,000,000                  | \$30,000,000                 | \$30,000,000             | \$30,000,000               |
| <b>Recreation/Tourism</b>                          |                    |                             |                               |                              |                          |                            |
| Upper-bound <sup>1</sup> - Cost of displacement    | \$0                | \$3,000,000                 | \$3,000,000                   | \$3,000,000                  | \$3,000,000              | \$3,000,000                |
| Lower-bound <sup>2</sup> - Cost of displacement    | \$0                | \$2,000,000                 | \$2,000,000                   | \$2,000,000                  | \$2,000,000              | \$2,000,000                |
| <b>Commercial Fisheries</b>                        |                    |                             |                               |                              |                          |                            |
| Costs  | \$0                | \$0                         | \$0                           | \$0                          | \$0                      | \$0                        |
| <b>Net-Present Value</b>                           |                    |                             |                               |                              |                          |                            |
| Upper-bound <sup>1</sup>                           | \$0                | \$88,000,000                | \$88,000,000                  | \$88,000,000                 | \$88,000,000             | \$88,000,000               |
| Lower-bound <sup>2</sup>                           | \$0                | \$28,000,000                | \$28,000,000                  | \$28,000,000                 | \$28,000,000             | \$28,000,000               |

<sup>1,2</sup> OMB Circular A-4 - Regulatory Analysis (Sep 17, 2003) requires use of two discount rates (both 3 and 7 percent)

<sup>3</sup> One standard deviation below the 16 year average Tongass NF harvest from Table 4

### Infrastructure Development

With some exceptions, federal and state road development is presently limited in IRAs. Exceptions include roads with reserved or outstanding rights, roads provided for by statute or treaty, or road development related to a Federal Aid Highway. Roadless protection would be removed to various degrees under the proposed rule and Alternatives 2 through 5 with corresponding implications for regional highway development. In most cases, changes in roadless management, as well as changes in the number of acres managed as roadless, would be more permissive with respect to regional road systems. In addition to those roads presently excepted, Roadless Priority ARAs would also allow roads needed for the connection of communities and development of the regional transportation system as identified in the State of Alaska’s Southeast Alaska Transportation Plan. Timber Priority ARAs and areas removed from roadless protection would remove roadless rule- related restrictions on road building. As a result, more areas would be available for additional types of regional road development under the proposed rule and Alternatives 4 and 5. Future road projects would be subject to funding constraints and evaluated in detail on a project-by-project basis.

None of the regulatory alternatives are expected to substantially affect the development of energy projects or related infrastructure. Removing roadless designations in areas under the proposed rule and Alternatives 2 through 5 would simplify the process for projects but would not necessarily result in an increase in the number of projects developed.

In areas where new roadless areas are added or expanded, the permitting process could be more complicated, but projects would not be prohibited. An exemption for utility systems in Roadless Priority ARAs under Alternatives 2 through 5 and Community Priority ARAs (under Alternative 3) would allow for tree cutting and road construction. Under Alternative 4, Timber Priority ARAs would not prohibit tree cutting or road construction at all. Where restrictions are removed, or exemptions added, the greatest effect may be in making the permitting process for developers less burdensome, resulting in a more rapid permitting process rather than an increase in the number of sites developed.

### **Alaska Native Customary and Traditional Uses**

Areas allocated to Roadless Priority and Community ARAs would explicitly allow the cutting, utilization, customary trade, and removal of trees for the purposes of Alaska Native customary and traditional uses, as well as road construction deemed necessary by a federally recognized Tribe for access to Alaska Native cultural sites. This type of use would also be allowed in Timber Priority ARAs, which allow all timber harvest and road construction. These types of uses would also be allowed in areas removed from roadless protection, subject to applicable Forest Plan standards and guidelines.

### **Subsistence**

Marine resources, including fish, mammals, and plants, account for more than half of total per capita harvest in all Southeast Alaska communities, ranging from 55 percent in Tenakee Springs to 88 percent in Skagway (USDA Forest Service 2019). These resources are not expected to be affected by any of the regulatory alternatives. Among the subsistence resources of greatest importance (salmon, other finfish, marine invertebrates, and deer), deer is the only one that could be potentially significantly affected by the alternatives evaluated in the 2016 Tongass Forest Plan EIS (USDA Forest Service 2016). Therefore, the subsistence analyses prepared for each Community area for that EIS used deer as a key indicator for potential impacts to subsistence resources.

Multiple species of fish (including salmon) harvested for subsistence and personal use, commercial fisheries, and tourism and guided recreational fishing. Salmon, trout, char, and eulachon (hooligan) of the Tongass National Forest are harvested in subsistence fisheries and for personal use by local residents. Salmon and trout are also the basis of tourism and guided fisheries enjoyed by thousands of visitors, supporting hundreds of tourism and support businesses. The commercial fisheries derived from Tongass streams and rivers produce 28 percent of the Alaska salmon harvest, and support fishing and processing jobs for thousands of local residents and nonresidents (USDA Forest Service 2017).

The subsistence analysis conducted for the 1997 Forest Plan Revision FEIS found that some effects to fish habitat may result from land management activities, but the magnitude of the effects could not be calculated. The 1997 FEIS (USDA Forest Service 1997) noted that the amount of acreage of timber harvest was at most less than 20,000 acres per year, representing approximately 0.5 percent of the total remaining productive old growth (or 5 percent over the next decade) and less than 0.02 percent of the entire Forest. The proposed rule and other

regulatory alternatives would allow considerably less timber harvest and new road construction than the alternatives evaluated in the 1997 FEIS. Total annual old-growth harvest allowed over the 100-year planning period would be approximately 42,500 acres, substantially lower than the maximum proposed in the 1997 FEIS. Regardless of the absence of Watershed priority protections under the proposed rule, Riparian Management standards and guidelines established in the 2016 Forest Plan (USDA Forest Service 2016) would remain in place.

The proposed rule, and other regulatory alternatives, including the baseline 2001 Roadless Rule, would result in a reduction in deer habitat capability from existing conditions due to the harvest of mature young-growth and productive old-growth forest. Over the long term, reductions in habitat capability would reduce carrying capacity, or the numbers of deer an area is capable of supporting given the available resources. This could lead to a decline in the deer population, particularly following severe winters, if the demand for resources (e.g., food or habitat) exceeds the amount available.

Timber harvest tends to affect deer-related subsistence activities in two ways. In the short run, approximately 20 to 30 years following harvest, deer populations tend to increase in harvested areas. In the long run, populations tend to decline as the canopy in even-aged forest stands closes, resulting in lower habitat quality. Reductions in habitat quality can be reduced through management (e.g., thinning) of young-growth stands.

Deer populations in unharvested areas are likely to remain at fairly constant levels that are typically lower than a comparable harvested area in the short run, but higher in the long run. Road construction also affects subsistence by providing subsistence hunters with ready access to areas that may have been previously inaccessible. This effect may be perceived as either positive or negative depending on the parties involved, as increased access may lead to increased competition for resources. Potential effects are likely to vary by community and may be perceived differently by members of the same or neighboring communities. Potential effects by community are assessed in the Communities section in the 2016 Forest Plan EIS (USDA Forest Service 2016).

While there would be some new road access under the proposed rule and regulatory alternatives in the long run, nearly all new roads constructed under the regulatory alternatives would be closed following harvest. These roads would, therefore, not be available for use by highway vehicles or high-clearance vehicles. They would, however, be available for access by other methods and would, as a result, have the potential to affect existing subsistence patterns. Some roads would be left open and available for access on maintained roads for administrative use, recreation and other uses such as infrastructure.

### ***Agency Costs including Control of Regulatory Costs***

This section discusses the potential for relative changes in agency costs and revenues, across regulatory alternatives, for activities related to roadless area designations. The proposed rule do not prescribe project-level or site-specific activities. As a consequence, agency costs and differences in program costs across regulatory alternatives have not been quantified.

The Forest Service also incurs costs associated with planning, preparation, and administration of treatment projects and timber sales. On average, the Forest Service spent approximately \$12.5 million per year to administer Tongass timber sales from 2005-2014, excluding road building costs, and received approximately \$1.1 million in revenue per year (GAO 2016). The proportion of funds allocated to projects in roadless areas may increase or decrease as a function of the amount of treatment (e.g., cutting) and road construction projected to occur under each regulatory alternative but costs cannot exceed program budgets that have remained relatively flat. Given that USFS may also need to pay for access roads to make timber sales viable, budgetary constraints may limit prospects for increasing overall timber harvest levels, separate from considerations regarding future amendments to the 2016 Forest Plan. Further it is unlikely that the proposed rule or other regulatory alternatives will result in a change in these costs.

In addition, the proposed rule has been reviewed in accordance with E.O. 13771 on reducing regulation and controlling regulatory costs. Additional government expenditures may be required to facilitate Tongass NF timber sales. However, given that the proposed rule will remove all roadless areas on the Tongass NF under the 2001 roadless rule, the rule should be considered an E.O. 13771 deregulatory action. The proposed rule is the response to the State of Alaska's petition requesting that the Secretary of Agriculture consider exempting the Tongass NF from the 2001 Roadless Rule. Under the proposed rule, roadless protection would be removed from all roadless areas on the Tongass, resulting in a reduction of 9.2 million acres of roadless areas (Table 1). Former roadless areas would be managed in accordance with the 2016 Forest Plan (USDA Forest Service 2016) with an estimated net gain of about 165,000 acres of suitable old growth, including 59,000 acres of high-volume suitable old growth (Table 1). This estimated gain (165,000 acres) is equivalent to about 72 percent of the acres available under the baseline 2001 roadless rule and almost seven times the old-growth acres expected to be harvested over the next 25 years (24,000 acres). These acres provide flexibility for timber managers for designing timber sales that appraise positive. Cost savings from improved flexibility could, in turn, potentially improve the Forest Service's ability to offer economic sales that meet the needs of industry. Estimated harvest cost savings (felling, yarding, loading, etc.) range from \$1 to \$2 million dollars per year depending on the level of harvest (one standard deviation less than the average annual harvest on the Tongass NF, over the last 16 years, in Table 4, or the harvest ceiling under the 2016 Forest Plan of 46 MMBF)<sup>6</sup>. This range of harvest accounts for uncertainty in timber demand; accounting for past influences of the 2016 and 2008 Forest Plans by using the annual average depicted in Table 4. In addition the upper-bound or ceiling of 46 MMBF, set forth by the 2016 Forest Plan, is a projection of future demand. Consistent with the agency's responsibilities under the Tongass Timber Reform Act, which directs the Forest Service to seek to provide a supply of timber from the Tongass National Forest that meets annual market demand and the market demand for each planning cycle to the extent consistent with providing for the multiple-use and sustained-yield of all renewable resources and other applicable requirements, including NFMA. While many factors can influence the cost of timber harvest,

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<sup>6</sup> Detailed explanation of the source (USDA Forest Service 2019b) and calculations used in this analysis are provided below in the Cost Benefit sub-section Potential Impacts by Resource Area.

areas along existing roads are typically more economically efficient, followed by areas where existing roads can be easily extended..

Cost savings from improved flexibility for the agency and timber industry would accrue alongside other benefits, displayed in Table 5 and discussed above; reduced cost for leasable mineral availability, renewable energy development potential, potential for development of state roads and other transportation projects, and benefits to Alaska native customary and traditional uses. Commercial fisheries would not be affected as Riparian Management standards and guidelines (established in the 2016 Forest Plan) would remain in place under the proposed rule and all of the regulatory alternatives. These benefits, or cost reductions from improved flexibility, outweigh lost revenue to outfitter and guides and other recreation related industry from potential displacement due to timber harvest (\$77,000 in in outfitter and guide related expenses and \$319,000 in total expenditures across all recreation related industries in Southeast Alaska<sup>7</sup> compared to the lower- and upper-bound estimate of timber harvest cost savings of \$1 to \$2 million dollars).

## **DISTRIBUTIONAL EFFECTS**

The Tongass NF comprises approximately 80 percent of Southeast Alaska and therefore plays a critical role in supporting local and regional economy, promoting economic diversification, and also enhancing rural community well-being. The visitor industry, seafood industry, and resource extraction industries contribute to local jobs and income alongside public sector employment spanning federal, state, and local government. While the visitor and seafood industries are the largest private-sector employers across Southeast Alaska, resource extraction remains important in some rural communities where jobs are limited and unemployment is oftentimes high.

### **Timber Industry**

Timber program output levels are expected to remain constant between the baseline 2001 Roadless Rule, the proposed rule and remaining regulatory alternatives; and involve a similar number of acres under all regulatory alternatives, varying only by the location of timber harvest. None of the regulatory alternatives propose changes to the projected timber sale quantity or timber demand projections set out in the Tongass Land and Resource Management Plan. The Tongass National Forest, in compliance with the Tongass Timber Reform Act (1990), seeks to provide an annual supply of timber to meet market demand to the extent consistent with providing for multiple use and sustained use of all renewable forest resources, and other requirements, including NFMA. Thus, the proportion of cutting activity occurring within versus outside of roadless areas would vary by alternative, but overall economic impacts are assumed to

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<sup>7</sup> These estimates provide an upper-bound ceiling for consideration of potential lost revenue, alongside cost savings to the timber industry, and should not be used as precise estimates of roadless area visitor expenditures or losses. Expenses incurred by visitors are not necessarily lost but subject to displacement related changes. While some businesses may lose revenues, if visitors choose not to travel to Southeast Alaska, others may see increases in revenues if visitors choose to stay longer or travel to substitute sites within Southeast Alaska. Detailed explanation and sources for this analysis is provided above in the Cost Benefit sub-section Potential Impacts by Resource Area.

remain constant. These impacts were estimated for the first decade following implementation in the 2016 Forest Plan FEIS (USDA Forest Service 2016) and are based on an annual average harvest of 46 MMBF. All regulatory alternatives, including the proposed rule, are assumed to support a similar range of direct jobs and income. Based on the 2016 Forest Plan EIS assessment, all of the regulatory alternatives would support an estimated 92 jobs in logging, 49 to 100 jobs in sawmilling, and 29 to 46 jobs related to transportation and other services, with direct income ranging from \$9.8 million to \$10.4 million. Thus no change in timber related employment or income is expected as a result of the proposed rule or other regulatory alternatives.

The local sawmilling and transportation-related employment estimates (from the 2016 Forest Plan EIS) were based on a range, from maximum possible shipment out of state (export of all Alaska yellow-cedar and western redcedar plus hemlock and Sitka spruce export equal to 50 percent of total sale net sawlog volume), to no shipment of western redcedar, hemlock, or Sitka spruce, and export of 100 percent Alaska yellow cedar. Transportation and other services include water transportation, independent trucking, stevedoring, scaling, and export marking and sort yard employment for export volume, and water transportation, scaling, and independent trucking for locally sawn volume. Export employs more workers in transportation and other services per million board feet harvested than domestic production, which is reflected in the range of values estimated for transportation and related services.

Actual employment and income in Southeast Alaska would depend on choices made by purchasers; those choices may change as markets and prices shift. Under current market conditions, purchasers are likely to export as much as they can while processing enough material locally to keep manufacturing facilities open, and take advantage of opportunities to produce high-value sawn material in Southeast Alaska. In addition, the Regional Forester has allowed increased export on a case-by-case basis, as discussed above and explained in Appendix H of the 2016 Tongass Forest Plan (USDA Forest Service 2016). If purchasers were allowed on a case-by-case basis to export a larger share of a particular sale in unprocessed form, there would be a commensurate reduction in sawmilling jobs and an increase in transportation-related jobs.

### **Recreation and Tourism**

Potential impacts to recreation and tourism are evaluated with respect to *Recreation Opportunity Spectrum* (ROS) settings, *Recreation Places* and *Visitor Use*. The Recreation discussion of the Regulatory Flexibility Analysis for the proposed rule (USDA Forest Service. 2019a) also assesses impacts to outfitter/guide businesses.

#### *Recreation Opportunity Spectrum*

Under the baseline 2001 Roadless Rule, most projected harvest is expected to occur in ROS settings where some modification of the natural environment is expected. Less than 1 percent of the acres currently allocated to Primitive (P), Semi-Primitive Non-Motorized (SPNM), and Semi-Primitive Motorized (SPM) ROS settings would be harvested after 100 years, assuming the maximum allowable levels of harvest were to occur. Assuming that the estimated total number of acres harvested would be the same for each alternative and that harvest would be evenly distributed across the available suitable acres, Roadless Modified as a share of the estimated total would decrease relative to the baseline (2001 Roadless Rule) under the proposed rule and other

regulatory alternatives, dropping from almost 90 percent under the baseline (2001 Roadless Rule) to 67-68 percent under the proposed rule and Alternatives 4 and 5. Much of this decrease would be made up by an increase in SPNM acres. SPNM as a share of the estimated total would range from about 6 percent under the baseline 2001 Roadless Rule and Alternative 2 to 23 percent under the proposed rule and Alternatives 4 and 5.

*Recreation Places*

The pattern of use associated with known protected boat anchorages, boat landings, aircraft landing sites, and the limited road systems makes it possible to identify specific “recreation places” on the Tongass. A total of 1,436 recreation places, encompassing approximately 3.6 million acres, were identified as part of the planning process for 1997 Forest Plan Revision (USDA Forest Service 1997). Recreation places are classified in two basic ways. First, recognizing that access plays a key role in recreation in Southeast Alaska, “home ranges” were defined for each community. Inventoried recreation places were classified into two categories: those located within a radius of approximately 20 miles from communities (“home range”) and those farther than 20 miles from a community. Almost half (48 percent) of the identified recreation place acres are within a community home range. Second, recreation places were identified as either important or ordinary/common based on five categories: facilities, marine, hunting, fishing, and tourism. Recreation places may be important for one, several, or none of the identified categories. Important recreation places by category are summarized in Table 7.

Table 7. Important Recreation Places by Category<sup>1</sup>

|                         | Number of Places | Percent of Total <sup>2</sup> | Acres (1,000s) | Percent of Total <sup>2</sup> |
|-------------------------|------------------|-------------------------------|----------------|-------------------------------|
| Facilities <sup>3</sup> | 402              | 28                            | 1,053          | 29                            |
| Marine <sup>4</sup>     | 617              | 43                            | 1,089          | 30                            |
| Hunting <sup>5</sup>    | 373              | 26                            | 1,452          | 40                            |
| Fishing <sup>6</sup>    | 187              | 13                            | 472            | 13                            |
| Tourism                 | 876              | 61                            | 1,924          | 53                            |
| <b>Total</b>            | <b>1,436</b>     | <b>NA</b>                     | <b>3,630</b>   | <b>na</b>                     |

na = not applicable

<sup>1</sup> Recreation places are rated as either important or common/ordinary.

<sup>2</sup> The Percent of Total columns sum to more than 100 because a recreation place can be rated important in more than one category.

<sup>3</sup> All recreation places with facilities were rated as being important. In addition, other recreation places with some type of facility, such as a viewing platform, and facilities authorized by a special use permit for recreation purposes, were identified as important.

<sup>4</sup> The marine category identified here is different to the marine type identified in Table 3.15-6 of the Tongass NF Forest Plan (USDA Forest Service 2016). The marine category in this table only includes those recreation places that are truly unique or typify the Southeast Alaska marine experience.

<sup>5</sup> Important hunting areas were distinguished from ordinary hunting areas based on a number of factors, including heavy recurring use, hunter success, ease of access, opportunities for several species, and prized species, such as mountain goats and moose.

<sup>6</sup> Important fishing recreation places were identified using ADF&G ratings for recreational fishing.

Source: USDA Forest Service 2016, Table 3.15-7

As discussed with respect to ROS settings, although the regulatory alternatives would vary in terms of the amount and location of acres suitable for timber harvest, the total volumes expected to be harvested would be the same under the proposed rule and each regulatory alternative. The following analysis assumes that the estimated total number of acres harvested over 100 years would be the same for each alternative and that harvest would be evenly distributed across available suitable acres, including those that coincide with important recreation places. Based on these assumptions, the acres of old-growth acres harvested within four of the recreation place categories (home range, facilities, marine, and hunting) would mostly decrease relative to the baseline 2001 Roadless Rule. This relative decrease would occur because old-growth acres in these recreation places would make up a smaller share of total Forest-wide suitable old-growth acres.

#### *Visitor Use*

Based on the results of the National Visitor Use Monitoring program for 2010 to 2014 and coefficients developed by White and Stynes (2010), the Forest Service (2017) calculated a visitation estimate of 2,874,000 annual visits to the Tongass. The results of earlier surveys indicated that half of Alaska residents surveyed who live in Southeast Alaska reported using a boat or plane to access the national forest (White and Stynes 2010). Almost half (49.7 percent) of non-resident visits to the Tongass involved the use of a guide or outfitter at some point, with local cruises, wildlife viewing, and flightseeing reported most frequently. Alaska residents in contrast were found to very rarely use outfitters or guides (White and Stynes 2010).

Timber harvest and associated road construction in Primitive and Semi-Primitive (SPNM and SPM) ROS settings has the potential to affect recreation activities and users dependent on remote, natural settings with low to no evidence of human use. Harvest in these settings could affect the quality of the recreation experience and displace visitors to other parts of the Forest. These types of impacts are likely to occur in Primitive, SPNM, and SPM ROS settings in recreation places, especially in “home range” recreation places (i.e., those within approximately 20 miles of communities). Impacts are likely to be most acute in Primitive and Semi-Primitive areas where recreation use is already at or near capacity, including areas where competition already exists between resident recreationists, independent visitors, and commercial outfitter/guide operations.

Changes in roadless area protections could also indirectly affect nearby Primitive and Semi-Primitive ROS settings, as displaced recreationists seek other locations with similar qualities. In addition to long-term impacts in Primitive and Semi-Primitive settings, in the short term, resident and other recreationists could be displaced by logging operators in the nearby vicinity, with the presence of logging equipment potentially affecting access and the overall quality of the recreation experience. This type of short-term impact would potentially affect recreationists across all ROS settings.

The regulatory alternatives evaluated here could also result in different supply-induced changes in participation. In the past, supply-induced changes in participation on the Tongass have been mainly related to changes in road systems and road access. This type of change in participation appears to have occurred on Prince of Wales, Wrangell, and Mitkof Islands, for example. In

these locations, road systems developed for timber harvesting created an opportunity for road-related access to previously inaccessible recreation settings and, therefore, an opportunity for recreation activities involving wheeled vehicles. In addition, new roads that provide easier access to a wider area may create new semi-primitive opportunities that increase the capacity of a recreation place or create a new recreation place. Over time, continuation of such new opportunities would be dependent on the availability of funds for road maintenance and other system management needs.

There would be some new road access in the long run under all regulatory alternatives. In addition, the Community Priority ARA (under Alternative 3) would allow road construction and reconstruction in conjunction with the construction, expansion, or maintenance of a developed recreation site. Nearly all new roads constructed under the regulatory alternatives would be closed following harvest. These roads would, therefore, not be available for use by highway vehicles or high-clearance vehicles. They may, however, be available for access by other methods and would, as a result, have the potential to affect existing recreation patterns. Any potential increase in recreational access may be limited by the extent to which road closures include restoring the road bed to a more natural condition, possibly blocking or discouraging non-vehicle access as well. The proposed rule and Alternatives 2 through 5 would increase the acres available for timber harvest, but harvest levels are expected to remain the same across all regulatory alternatives. As a result, the amount of new or reconstructed road miles would be similar across the regulatory alternatives, but would be lowest under the baseline 2001 Roadless Rule and Alternative 2 and highest under the proposed rule and Alternatives 4 and 5. Alternative 3 would likely result in more roads than the baseline 2001 roadless rule and Alternative 2, and fewer than the proposed rule and Alternatives 4 and 5. In addition, based on the distribution of suitable acres, the proposed rule and Alternatives 4 and 5 would be more likely to result in new road construction in Primitive or Semi-Primitive ROS settings.

### **Salmon Harvesting and Processing**

The proposed rule and other regulatory alternatives are not expected to have a significant change to the commercial fishing or fish-processing industries over the planning period provided the 2016 Forest Plan protections remain in place. Riparian Management standards and guidelines established in the 2016 Forest Plan (USDA Forest Service 2016) would remain in place under the proposed rule and all of the regulatory alternatives. While there would be some variation in the level of protection, these variations are not expected to affect the fishing industry. Regardless of the absence of Watershed priority protections under the proposed rule, the Riparian Management standards and guidelines established in the 2016 Forest Plan would continue. The future of the fishing industry in Southeast Alaska is more likely to depend upon occurrences outside of the Tongass NF such as hatchery production, offshore harvest levels, and changes in ocean conditions.

The 1997 FEIS (USDA Forest Service 1997) noted that the amount of acreage of timber harvest was at most less than 20,000 acres per year, representing approximately 0.5 percent of the total remaining productive old growth (or 5 percent over the next decade) and less than 0.02 percent of the entire Forest. That EIS concluded that this was not expected to result in a significant change to commercial fishing employment. The proposed rule and other regulatory alternatives

would allow considerably less timber harvest and new road construction than the alternatives evaluated in the 1997 FEIS. Total annual old-growth harvest allowed over the 100-year planning period would be approximately 42,500 acres, substantially lower than the maximum proposed in the 1997 FEIS.

### **Mining and Mineral Development**

The Forest Service divides minerals resources into three groups: locatable minerals, leasable minerals, and salable minerals. A locatable mineral is any mineral that is “valuable” in economic terms or has a property that gives it distinct and special value. Examples of locatable minerals on the Tongass include gold, silver, copper, molybdenum, iron, nickel, lead, and zinc. The General Mining Law of 1872, as amended, grants every United States citizen the right to prospect and explore public domain lands open to mineral entry. The right of access is guaranteed and is not at the discretion of the Forest Service. Exploration, mining, and mineral processing activities, including road construction and reconstruction, are presently allowed in IRAs and would continue to be allowed under the proposed rule and all the other regulatory alternatives. Changes in roadless management under the proposed rule is, therefore, not expected to affect existing or future locatable mineral exploration or mining activities on the Forest.

Leasable minerals are certain types of minerals, primarily energy resources (e.g., oil, gas, coal, and geothermal resources) that are not subject to mining claim location but are available for exploration and development under provisions of the Mineral Leasing Act of 1920. Roadbuilding is currently prohibited for any new leasable projects, including geothermal projects, within IRAs. For Alternatives 2 through 5, this prohibition would continue in ARAs with watershed (Alternative 2) and LUD II priorities. Following project-specific analyses, roads could be approved for leasable projects within ARAs with timber (Alternative 4) or roadless priorities. Under the proposed rule roadbuilding would not be prohibited for any new leasable projects, including geothermal projects, with removal of roadless areas on the Tongass NF. The Tongass has no current leasable mineral activity and the anticipated demand for leasable minerals is expected to remain low. The Bureau of Land Management (BLM) conducted an assessment of mineral resource potential in support of a resource management plan for the Ring of Fire planning area, which includes Southeast Alaska. While there has been oil and gas exploration activity in the Yakutat area in the past, the resource development potential is considered low; therefore, the BLM expects no exploration or development activity within the 2016 Forest Plan period of analysis (10 to 15 years). Outside of the Yakutat area, oil and gas occurrence potential elsewhere in the Tongass is considered low to none. Occurrences of coal found at several locations in Southeast Alaska; however, the BLM considers development of these resources to be uneconomic in the near future, other than possibly for local use, and does not foresee associated exploration or development activity (USDA Forest Service 2016). As a result, changes in roadless management are expected to have limited impacts on related economic activity.

Salable minerals from the Forest are mainly used to construct NFS roads. Since road construction is not expected to vary much between regulatory alternatives, there would be little difference in salable mineral development between the regulatory alternatives.

## CONCLUSIONS

The proposed rule is intended to provide for economic development opportunities in Southeast Alaska in response to the State of Alaska's petition requesting that the Secretary of Agriculture consider exempting the Tongass NF from the 2001 Roadless Rule. The proposed rule is programmatic and does not directly authorize the implementation of any ground-disturbing activities. The proposed rule provides greater flexibility for the selection of future timber sale areas and sale design (depending on the sale areas selected); and could, in turn, potentially improve the Forest Service's ability to offer economic sales that meet the needs of industry; improving flexibility for timber managers for designing timber sales that appraise positive. Estimated harvest cost savings (felling, yarding, loading, etc.) range from \$1 to \$2 million dollars per year depending on the level of harvest (one standard deviation less than the average annual harvest on the Tongass NF, in Table 4, and the harvest ceiling under the 2016 Forest Plan). Cost savings from improved flexibility for the agency and timber industry would accrue alongside other benefits, displayed in Table 5 and discussed above; including reduced cost for leasable mineral availability, renewable energy development potential, potential for development of state roads and other transportation projects, and benefits to Alaska native customary and traditional uses. These benefits, or cost reductions, outweigh estimated potential lost revenue to outfitter and guides (approximately \$77,000 per year) and across all recreation related industry in Southeast Alaska (\$319,000 per year, includes outfitters and guide expenditures)<sup>8</sup>. Quantitative analysis of timber industry cost savings and lost revenue to recreation industry is based on annual harvest levels and does not vary by regulatory alternative given the agency's responsibilities under the Tongass Timber Reform Act (which directs the Forest Service to seek to provide a supply of timber from the Tongass National Forest that meets annual market demand to the extent consistent with providing for the multiple-use and sustained-yield of all renewable resources and other applicable requirements, including NFMA). Where monetary expressions are not available, value and tradeoffs are considered in qualitative terms pursuant to Executive Order 13563. Thus qualitative analysis of the proposed rule and regulator alternatives is provided for Scenic Quality, Recreation Opportunities and Traditional Cultural Properties and Sacred Sites. As discussed in the section on *Analysis of Roadless Characteristics under the Proposed Rule*, the highest effects on scenery would be associated with the proposed rule and Alternative 5, more lands in the primitive Recreation Opportunity Spectrum class would be removed under 4, 5 and the proposed rule, and the most risk to cultural resources may occur under the proposed rule and Alternatives 4 and 5. None of the regulatory alternatives propose changes to the projected timber sale quantity or timber demand projections set out in the Tongass Land and Resource Management Plan; thus the proposed rule would not decrease timber related jobs, income or output. Lastly, the proposed rule is not anticipated to alter output or employment

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<sup>8</sup> These estimates provide an upper-bound ceiling for consideration of potential lost revenue, alongside cost savings to the timber industry, and should not be used as precise estimates of roadless area visitor expenditures or losses. Expenses incurred by visitors are not necessarily lost but subject to displacement related changes. While some businesses may lose revenues, if visitors choose not to travel to Southeast Alaska, others may see increases in revenues if visitors choose to stay longer or travel to substitute sites within Southeast Alaska. Detailed explanation and sources for this analysis is provided above in the Cost Benefit sub-section Potential Impacts by Resource Area.

in local economies associated with recreation and tourism, commercial fisheries and mining related industries.

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