

**Roadless Areas and the 1997 Tongass Land Management Plan:  
an assessment of timber supply alternatives.**

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**Introduction**

Ecotrust has been working to design a conservation strategy for the Tongass National Forest based on obtaining timber from existing roads and infrastructure. We believe that these areas can provide a sustainable timber supply and also would also protect fish, wildlife, water quality and other forest values. This strategy will focus future management activities on existing roads and leave currently roadless areas in their natural state. We believe that this compromise will avoid the controversy that has characterized planning of timber sales over the past several decades, and thus provide a stable supply of timber for the regional wood-products industry.

**Methods**

These calculations were conducted using the 1997 Tongass Land Management Plan Final EIS database. This database uses a hexagonal sampling grid of approximately 800,000 points to systematically sample the co-occurrence of vegetative and physiographic characteristics throughout the Tongass National Forest. Each point represents an area of approximately 12 acres. Estimates based on this system generally are within 2% of actual values based on other, more detailed sources. For our purposes, we believe that this is an acceptable margin of error.

In addition to the TLMP FEIS database, we used USFS definitions based on the Tongass Roadless Inventory, which describes roadless as all areas greater than 1,200 ft from existing roads or greater than 600 ft from previously cut areas, current in 1995. Although this inventory is slightly out of date, we determined that it was acceptable for our purposes because changes in the overall extent of roading since 1995 have been relatively small, and any changes have only increased the available volume of timber from these areas. Thus, our estimates are conservative, and actual availability of timber from existing roads will be slightly higher than is reported here. Finally, this was the best available information from USFS sources at the time of that the TLMP FEIS database was compiled. We also selected a conservative definition of roaded areas. For example, currently roadless areas that have been NEPA cleared for roading as well as roadless areas < 5,000 acres in size were considered roadless in our analysis.

Consistent with the Tongass Land Management Plan (for example: 1997 TLMP FEIS Table 3-77), we used a method based on successive elimination of lands that were protected by congress or unsuitable for timber harvest (not tentatively suitable), and lands unavailable based on standards and guidelines adopted in the final TLMP (not available). For areas that were ultimately determined as suitable for harvest and available under the 1997 TLMP, we further eliminated lands not identified as roaded in the USFS Roadless Inventory. The resulting selection was the land base from which we estimated harvestable volume (Figure 1).

For estimates of timber volume and other descriptions of land cover, we used the 1995 TLMP volume class definitions (high, medium, low) that were also consistent with the TLMP planning process. We estimated timber volume using coefficients of 35 mbf / acre for high volume stands, 25 mbf / acre for medium volume, and 16 mbf / acre for low volume stands based on forest-wide averages. Further, we applied a Model Implementation Reduction Factor (MIRF) to account for uncertainty in the GIS database such as unmapped streams, karst formations, protected species, etc. that reduce the actual volume of timber harvestable from the predicted volume. For old-growth areas, we used a MIRF of 0.739 based on the forest-wide estimate from the selected alternative in the 1997 TLMP. We believe this is a conservative estimate because previously roaded areas are better surveyed than roadless areas, and therefore should contain fewer unmapped features that will reduce potential harvest. In previously harvest areas, we used the MIRF estimate of 0.90 based on a review of existing data reported Appendix B of the 2002 Draft Supplemental EIS for review of wilderness potential.

## **Results and Discussion**

The Tongass National Forests covers a land area of approximately 16.8 million acres in Southeast Alaska (Table 1). The conservation system for on the Tongass is anchored around 5.7 million acres of designated wilderness established under the 1980 Wilderness Act and the 1990 Tongass Timber Reform Act (TTRA). In addition, the TTRA established approximately 723,000 acres of wildlands (LUD II) in which road construction is prohibited, and expanded no-cut buffers on salmon streams beyond those required under the State Forest Practices Act. Finally, approximately 165,000 acres of non-wilderness National Monument are contained within the Admiralty Island and Misty Fjords National Monuments. These areas are primarily in natural condition, although roads exist in the non-wilderness National Monument areas, and some logging activity was conducted prior to 1980. Currently, these areas are not available for logging, and are not subject to designations under the Tongass Land and Resource Management Plan.

Areas under consideration for potential development in the Tongass Land and Resource Management Plan and other administrative processes cover the remaining 10.2 million acres of the Tongass. These are assigned to a variety of prescriptions or Land Use Designations (LUD's) that range from Old Growth Habitat Reserve to Remote and Semi-remote Recreation to Timber Production as the primary activity. For our purposes, we have combined these into 2 groupings based on whether logging and road construction is allowed (Development LUD's) or not (Non-Development LUD's). In addition, the Tongass Land Management Plan establishes specific standards and guidelines relating to beach fringe and riparian stream buffers that provide additional protections on important habitats within development LUD's. Under the 1997 Tongass Land and Resource Management Plan, an additional 6.5 million acres, including both roaded and unroaded areas, were assigned administrative protection within a variety of non-development LUD's. The remaining 3.6 million acres were assigned to development LUD's, and include approximately 2.6 million acres of roadless areas and 1 million acres that contain existing roads. The USFS road system for the Tongass NF contains approximately 4,361 miles of existing roads that access a total of approximately 1,445,700 acres.

The entire Tongass National Forest contains approximately 2.4 million acres of tentatively suitable timberlands, including approximately 2 million acres of old-growth and 390,000 acres of previously harvested lands (Table 2, line 1). An additional 76,500 acres of previously harvested lands that are no longer part of the tentatively suitable landbase brings the total harvested area on the Tongass National Forest to approximately 466,300 acres. Under the system of land-use designations determined in the Tongass Land and Resource Management plan, as well as the standards & guidelines protecting beach fringe and riparian stream buffers, an approximate total of 1,028,000 acres (Table 2, line 2), 46% of which is contained within existing roaded areas (475,471 acres). Currently roaded areas that are available for logging under the Tongass Land and Resource Management Plan is comprised of 53.6% old-growth and 46.4% second-growth. Based on forest-wide averages of timber by volume class and associated MIRF reductions, these areas contain an estimated 5.4 billion board-feet of standing old-growth timber and an additional 7.7 billion board-feet of second-growth that should be available for harvest over the next 100 years (Figure 2). Although estimates of the annual allowable harvest are notoriously difficult, on a 100-year rotation, this timber base should provide a sustainable harvest of near 100 million board-feet per year. Although this rate is substantially lower than was harvested during the peak years of the 1980's, we believe that this more modest rate will be sustainable over the long-term, and should provide relief from the contentious public controversy and litigation that has characterized proposed timber sales in roadless areas in recent years.

Table 1. Protected status and roadless designation of lands within the Tongass National Forest

| Land Status   | Approx. Acres |
|---|---------------|
| 1. Lands protected by congress (All):   | 6,631,559     |
| Wilderness Areas  | 5,743,247     |
| TTRA LUD II   | 723,143       |
| National Monument (non-wilderness)  | 165,169       |
| 2. Total Non-Development Land-Use Designations (LUD's) under 1997 TLMP (All): | 6,500,383     |
| USFS Roadless Areas <sup>1</sup>  | 6,149,744     |
| Roaded Areas  | 350,639       |
| 3. Remaining TLMP Development LUDs (All):                                     | 3,699,176     |
| USFS Roadless Areas <sup>1</sup>  | 2,610,274     |
| Roaded Areas  | 1,088,901     |
| 5. Total (1 - 3):   | 16,831,158    |

<sup>1</sup> Roadless areas in the TLMP FEIS database are current as of 1995. I have included roadless areas < 5,000 ac as well as those NEPA cleared for roading in this category.

Table 2. Tentatively suitable acres of commercial forestlands on the Tongass National Forest (line 1), available for timber harvest under the 1997 Tongass Land Management Plan by roadless status (line 2) and estimated volume of timber available in roaded areas (line 4).

| Land Classification  | Productive old growth (POG) |               |            |           | Total     |            |
|--|-----------------------------|---------------|------------|-----------|-----------|------------|
|  | High volume                 | Medium volume | Low volume | All POG   |           |            |
| 1. Tentatively suitable lands on the Tongass NF  | 868,179                     | 843,485       | 295,896    | 2,007,560 | 389,805   | 2,397,365  |
| 2. Tentatively suitable and available for logging under 1997 TLMP <sup>1</sup>             | 338,019                     | 339,336       | 120,021    | 797,375   | 230,738   | 1,028,113  |
| USFS Roadless Areas <sup>2</sup>   | 217,137                     | 238,959       | 86,563     | 542,660   | 9,981     | 552,642    |
| Roaded Areas   | 120,881                     | 100,376       | 33,457     | 254,715   | 220,756   | 475,471    |
| 3. Roaded Areas Corrected for Model Implementation Reduction <sup>3</sup>                  | 89,331                      | 74,178        | 24,725     | 188,234   | 220,756   | 408,990    |
| 4. Estimated timber volume available in roaded areas (in thousand board-feet) <sup>4</sup> | 3,126,600                   | 1,854,450     | 395,598    | 5,376,647 | 7,726,465 | 13,103,112 |

<sup>1</sup> Areas within a 1,000 ft. beach or estuary fringe, and those in the riparian no-cut zone under option 2A were not available for timber harvest.

<sup>2</sup> Roadless areas in the TLMP FEIS database are current as of 1995. I have included roadless areas < 5,000 ac as well as those NEPA cleared for roading in this category.

<sup>3</sup> To account for unmapped features that reduce the actual amount of harvestable timber, we used a Model Implementation Reduction Factor (MIRF) of 0.739 for old-growth, and .9 for young growth. These estimates were based on the overall reduction for TLMP Alternative 11 for old-growth (See 1997 TLMP EIS Table 3-77 and Appendix B) and a review of existing data on “falldown” in young growth stands (2002 Wilderness Draft SEIS Appendix B).

<sup>4</sup> Estimates of average volume used were 35 MBF/acre for high volume, 25 MBF/acre for medium volume, and 16MBF/acre for low volume. Previously harvested areas were estimated to re-grow to an average volume of 35 MBF/acre (see discussion in TLMP FEIS 3-299 : 3-306).

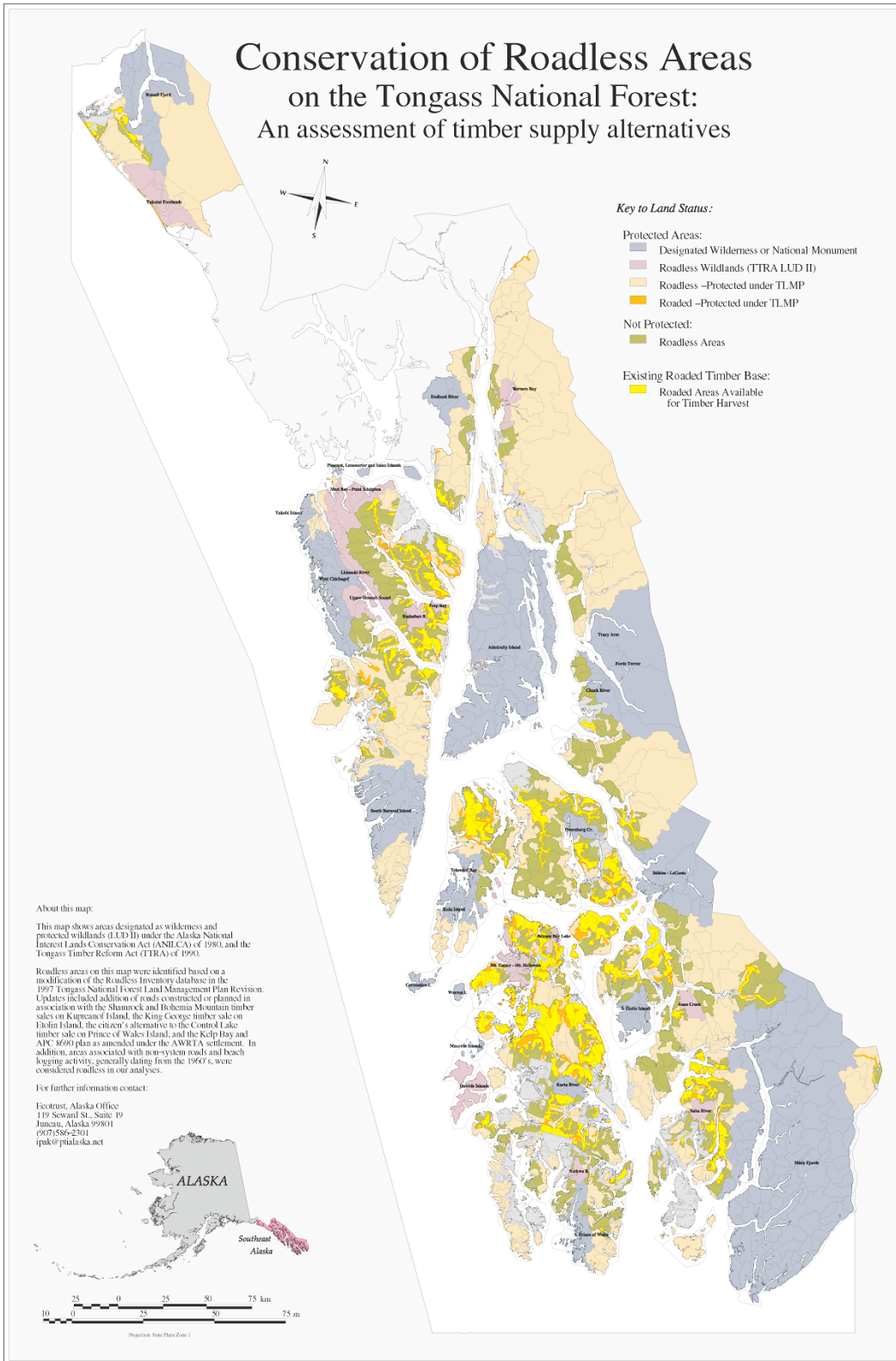


Figure 1. Land-use designations under the Tongass Land Management Plan and existing roadless areas in the USFS Roadless Inventory.

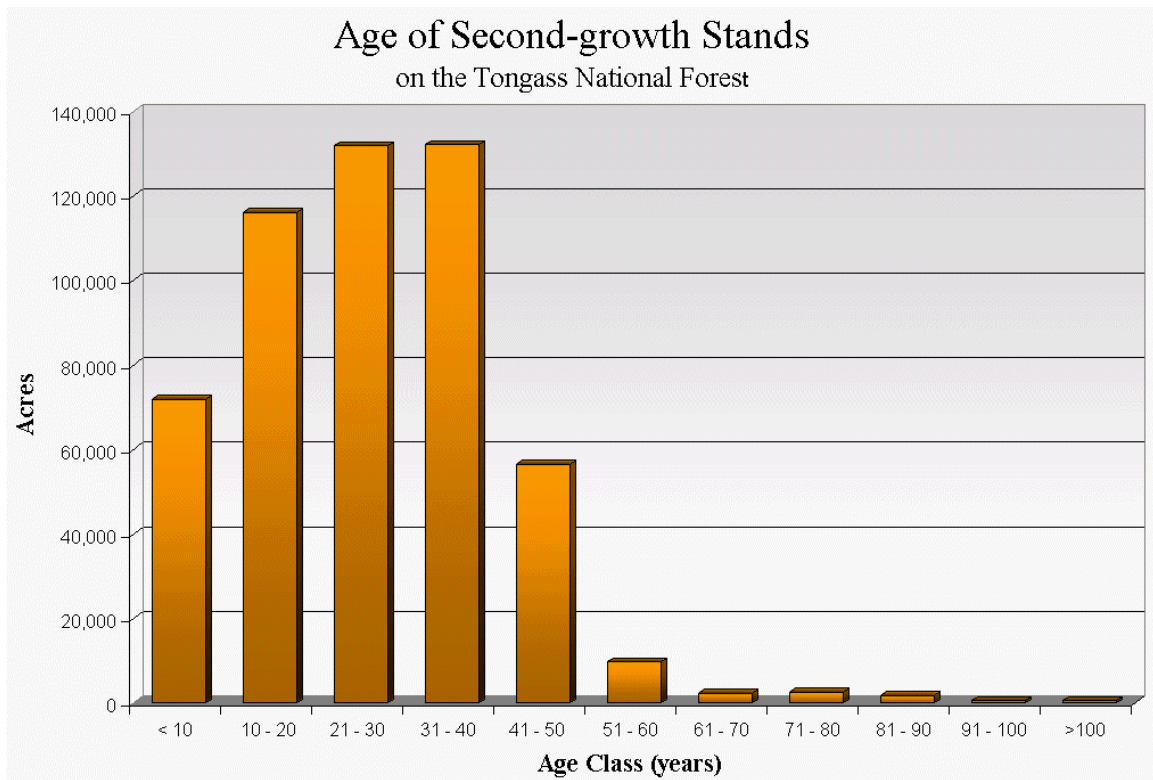


Figure 2. Age of second-growth stands on the Tongass National Forest that will be available for harvest over the next 100 years.