

How all of the Alternatives were built for Alaska Roadless.

Jacqueline Foss, with help from Christal Higdon, built the spatial data for the alternatives of Alaska Roadless Rulemaking process. Robert Nichols worked closely with both of us to help incorporate data provided by district rangers and Tongass Timber Staff.

General process:

1. Unioned (GIS process) the 2001 Roadless areas with 2016 Tongass Land Use Designation (LUD), Mineral LUD overlay, Value Comparison Unit (VCU) which holds the Tongass-77 (T-77) watersheds, and TNC-Audubon conservation areas
2. Identified (GIS Process) roaded roadless data from 2016 Tongass forest plan
3. Noted that there was missing roaded roadless information from the version used in the 2016 forest plan, buffered all roads and harvest units accordingly and intersected them with 2001 roadless area. Found an additional 6,000 acres of roaded roadless
4. Added info from the 2001-2016 Tetra tech roadless rule changes from forest plan
5. Heads up digitized areas to remove from roadless for alt 3 and 3' using HUC 14 lines
6. Added small islands greater than 1 acre as new roadless areas in alternative 2 and 3
7. Attributed polygons from union and subsequent layers to meet the 4 new roadless categories

Alternative 1.

Alternative 1 is the same as what is in the Tongass, Regional, and National GIS libraries. It has been updated to reflect post 2001 land exchanges and small geospatial errors. Data used to correct: Tongass Ownership GIS data, Wilderness GIS data

Alternative 2.

Alternative 2 removes roaded roadless from the 2001 Roadless areas. After review, it became apparent that the feature class used for the 2016 forest plan omitted roaded roadless areas. All roads built and approved then built during the exemption were buffered to 1,200 feet and all associated timber harvest was buffered to 600 feet. This data was then intersected with the library copy of the 2001 Roadless Areas. Small areas, i.e. doughnut holes created in the buffering process, were incorporated into these roaded roadless areas to maintain roadless areas greater than 5000 acres.

The 2001 inventoried roadless areas did not include any islands less than about 100 acres. All islands adjacent to roadless areas greater than 1 acre were added back into alternatives 2 and 3. The ALP ownership GIS data was used to identify islands. Some areas identified in the 2003 and/or the 2008 roadless inventories were added back into Alaska Roadless Areas (ARAs) that were never harvested.

LUD Types and Conservation areas	Roadless priority type
LUD II	LUD II Priority ARA
Roaded Roadless and small expansions	Removed from Roadless
Lands in T-77 and/or TNC-Audubon Areas	Watershed priority ARA
All other lands currently in 2001 Roadless Areas.	Roadless priority ARA

Alternative 3.

Alternative 3 expanded on alternative 2. It involved the most input from individuals. It includes all of the small islands greater than 1 acre and additional areas identified from the 2003 and 2008 inventories. Alternative 3 removes areas in development LUDs adjacent to Roadless areas/other roadless areas that could be suitable under the 2016 Tongass forest plan. Roadless was removed from LUD II areas and the statutory LUD II regulations remain.

All of the Ranger districts identifies priority areas for timber harvest. This data was captured during a meeting in October 2018. Most of the feedback consisted of “remove roadless on development LUDs.” The team considered this the logical extension of the road network alternative. The team added areas near existing roads and roadless areas using Hydrologic Unit Code (HUC)-14 watershed boundaries while avoiding T-77 VCU/watersheds and TNC-Audubon conservation areas. The current IRAs are polygons with buffers erased from them. Bringing these boundaries to a watershed divide seems rational so these roadless areas and roadless areas were expanded to the nearest watershed (HUC 14) boundaries in Timber Production and Modified Landscape LUDs. We tried to keep large roadless areas intact and maintain connectivity between valleys, where possible. A 2016 Tongass forest plan timber suitability run from summer of 2018 was used to make sure that any areas captured by alternative 3 include mostly suitable acres.

How the logical extensions were determined

A model was built in GIS that identified areas that were:

- In Timber Production or Modified Landscape 2016 Tongass LUDs
- Outside of any T-77 or TNC/Audubon areas
- Adjunct to existing roads

We then moved through these areas and identified areas to include in alt 3 prime. We used the watershed boundaries (HUC-14) to make this determination. We did not leave isolated roadless area islands.

Community Priority Areas

The first step in identifying the Community Use Priority areas was a review of the scoping comments received from local governments in support of Alaska roadless rulemaking and more economic opportunities for their communities. These communities included the City and Borough of Sitka, the City and Borough of Wrangell, the City and Borough of Juneau, the City of Ketchikan (also received letters from the Ketchikan Gateway Borough and Ketchikan Chamber of Commerce), and the City and Borough of Yakutat. While we didn't receive a letter from Thorne Bay, we did receive a letter from the Prince of Wales Chamber of Commerce. We did not include Craig/Klawock (due to comments from Craig Tribal opposed to rulemaking), but mapped Thorne Bay to see what that would look like. In reality, there's not much roadless around Thorne Bay that would fall within a Community Use Priority Area as mapped, and we'd suggest Ranger input on what is included.

The second step was to look at the road system serving those communities (using MVUM road data), applied a 1-mile buffer to either side of the roads, then we captured the watersheds that intersected those road systems (to the HUC 12 level). HUC-12 units are an appropriate scale to determine community use areas and we wanted to avoid using VCUs again.

The final step (to date) was to identify any T77/TNC Conservation Areas and remove those areas, assuming the Watershed Priority roadless category would be applied to those areas. The remaining roadless land currently identified as Roadless Priority in these areas could then be changed to Community Use Priority areas.

Hydaburg and Kake were done between the DEIS and FEIS and followed the same process (see changes between DEIS and FEIS below)

We recommend that the District Rangers for these communities and any interested stakeholders review the areas, as mapped, and then we can adjust based on their professional judgment if necessary (and include their rationale for any changes).

T77/TNC-Audubon areas outside of roadless areas

Further, areas that currently are outside of 2001 roadless areas (or areas that were removed as LUD II areas or Logical Extensions) were added back in alternative 3 as T77-TNC/Audubon areas outside of roadless.

LUD Types and Conservation areas	Roadless priority type
LUD II	Removed from Roadless
Roaded Roadless, extensions of existing transportation network in Timber Production LUD, Modified Landscape LUDS to HUC14	Removed from Roadless
Lands in T-77 and/or TNC-Audubon Areas	Watershed priority ARA
Lands identified by Communities that follow the above model	Community Priority ARA
All other T77 and/or TNC-Audubon areas outside of 2001 Roadless Areas	T77/TNC-Audubon areas outside of roadless
All other lands in 2001 roadless areas	Roadless Priority ARA

Alternative 4.

Alternative 4 includes all of the areas removed from the 2001 Roadless areas as alternative 3. Further, all roadless areas on Timber Production and Modified Landscape LUDs that did not intersect with Tongass-77 VCUs/watersheds and TNC-Audubon areas were made into Timber Priority ARAs. All other lands in the 2001 Roadless Inventory became Roadless Priority ARAs

LUD Types and Conservation areas	Roadless priority type
LUD II	LUD II Priority ARA
Timber Production, modified landscape outside of T77/TNC-Audubon Areas	Timber Priority ARA
Timber Production or Modified landscape + T-77 and/or TNC-Audubon areas; scenic viewshed, non-development LUDs currently in 2001 Roadless Areas	Roadless Priority ARA

Alternative 5

Alternative 5 came from the State of Alaska. It removes roadless on all development LUDs (Timber Production, Modified Landscape, and Scenic Viewshed) and mineral overlay LUDs regardless of T-77 or TNC-Audubon status.

LUD Types and Conservation areas	Roadless priority type
LUD II	LUD II Priority ARA
Development LUD, Mineral Overlay LUD	Removed from Roadless
Non-development LUD currently in 2001 Roadless areas	Roadless Priority ARA.

Alternative 6.

All roadless areas removed from all lands

The use of the 2003 and 2008 roadless inventories

The 2001 Roadless data layer from the corporate library is the authoritative source for roadless information for NFS lands. This is where the team is required to begin analysis and make alternatives from. The 2003 inventory is similar spatially to the 2001 inventory. The 2008 roadless inventory was a product from the 2008 forest planning effort. It was never an official roadless inventory. However, several areas identified in the 2008 inventory were added to Alaska roadless areas in alternatives 2 and 3 in both the DEIS and in the FEIS.

Changes made to the alternatives between Draft and Final

- The 2001 Roadless layer was cleaned up and vertically integrated with ALP Ownership and Wilderness boundaries. Lakes were removed and the shoreline was generally cleaned up. This is what Alternative 1 in the alternative feature class represents. It can be used to compare between the USFS GIS 2001 roadless layer and the current existing condition.
- All layers used to inform the Roadless alternative building (T77, TNC-Audubon areas, LUDs, mineral LUDs) were vertically integrated with ALP ownership and Wilderness. This resulted in significantly fewer slivers.
- A new roadless layer was built using air photo-verified existing roads, timber harvest, and powerline corridors. This was the basis for roadless in alternatives 2-5.
- The Situk T77 was implemented differently than planned due to changes in numbering system. There was a difference between VCU numbers in what TU called the Situk T77 watershed/VCU and how the USFS. This increased the Watershed priority areas in both alts 2 and 3. This was noted by the Yakutat RD staff. This information is currently working its way through Tongass NF planning and GIS staff.
- Powerline corridors were digitized and included as was run and applied to pre-2001 identified corridors. Powerlines removed from 2001 roadless areas remain outside of roadless. Powerlines not removed from 2001 roadless areas, remain in roadless. The roadless boundaries were cleaned up in these areas to include/exclude where the powerlines are actually constructed.
- All logical extensions from the DEIS were transferred to the new layer. Some areas removed from roadless areas near the Bradfield Canal on the mainland were added back into ARAs based on an updated roadless layer.

- All polygons less than 1 acre were merged with adjacent polygons for simplicity.
- Community use areas for Kake and Hydaburg were added based on the criteria listed above. During cooperative meetings with Hydaburg, they requested that the community use areas adjacent to Eek and Hetta Lake be changed back to roadless priority ARAS. This was completed 1/16/2020.
- Many of the streams important for subsistence were not included in T77-TNC/Audubon areas. An Analysis followed and a small area near Kook Lake was changed from Removed from Roadless back into Roadless ARA. Most of the watersheds with sockeye streams were located in wilderness, LUD II, non-NFS lands, or in T77/Audubon areas. Chad and Jacquie looked at these areas and added areas back into Roadless ARAs where they were connected to larger ARAs.