



Land & Forests

Roads & Roadless Areas in British Columbia

While roads serve the interests of the public, First Nations, and industries, they are also one of the most widespread forms of landscape change¹. Roads can threaten biological diversity and ecosystem health through habitat loss and fragmentation, expanding development, spread of [invasive species](#) and increasing human-wildlife interactions—for example animal mortality from collisions with vehicles¹. This indicator reports on the amount and distribution of roads and roadless areas in British Columbia.

- **British Columbia has approximately 719,000 kilometres of roads.** Roads include all paved roads and all unpaved roads and trails that allow motorized vehicle use.
- **Unpaved roads make up 92 percent of the roads in British Columbia.** B.C. has a long history of natural resource use resulting in this large gravel road network².
- **Two thirds of British Columbia's landbase is roadless.** The amount and distribution of roadless area—areas further than 500 metres from a road—varies considerably across British Columbia.

Large areas that are not influenced by roads or other landscape disturbances provide benefits and opportunities for British Columbia and British Columbians. These large, roadless—or intact—areas provide conservation benefits, for example providing habitat for species such as [grizzly bear](#), maintaining ecosystem services, such as water availability and flood control, and supporting adaptation to climate change. They also provide economic, recreational and wilderness opportunities.

B.C. Digital Road Atlas

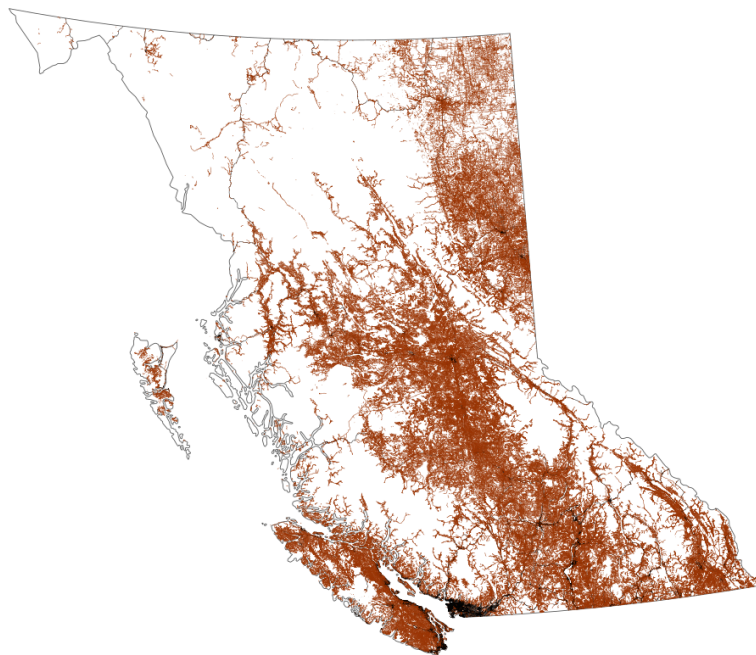
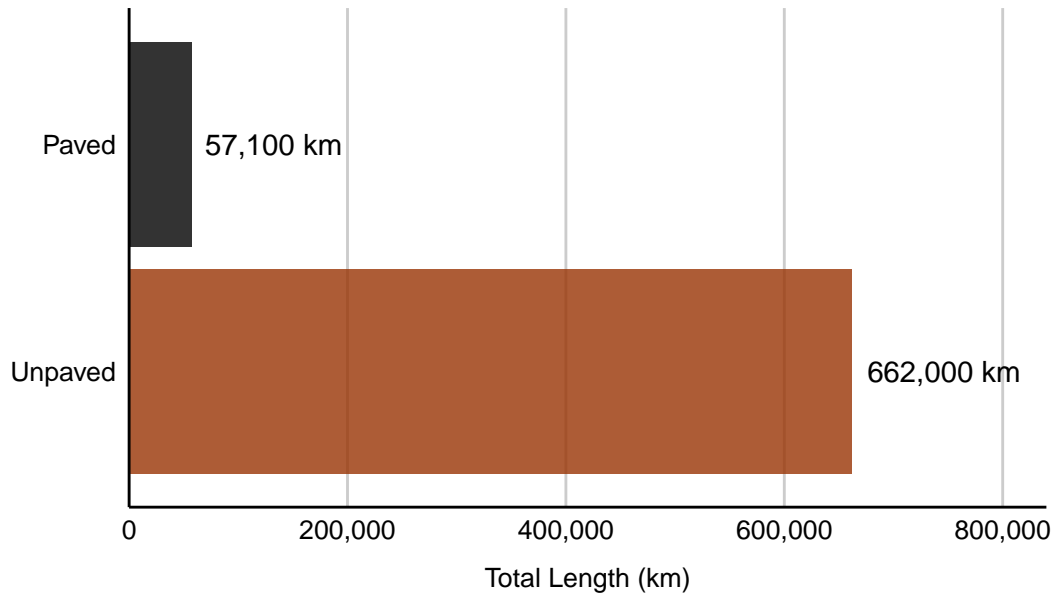
The Digital Road Atlas is the best available single source of road data for the Province of B.C.

The B.C. Government is working toward updating and integrating all resource roads into this single comprehensive database.

[Explore the B.C. Digital Road Atlas to learn more about roads in B.C.](#)

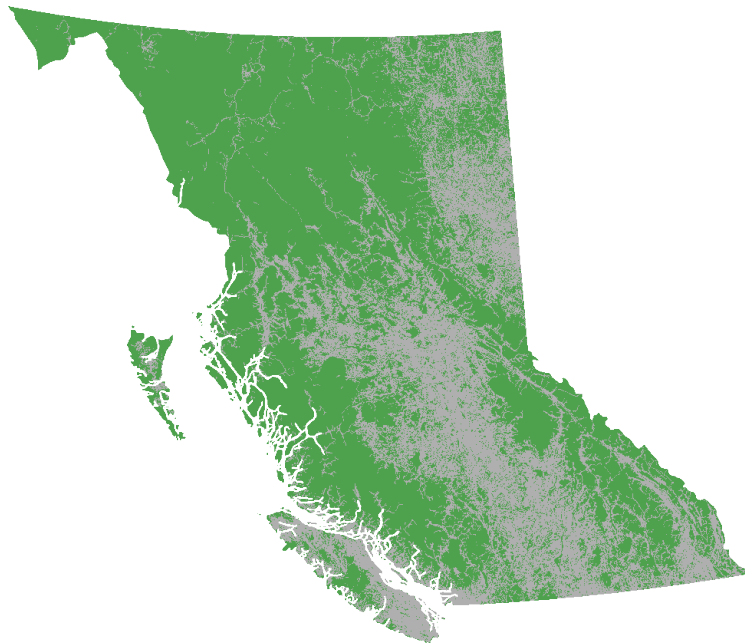
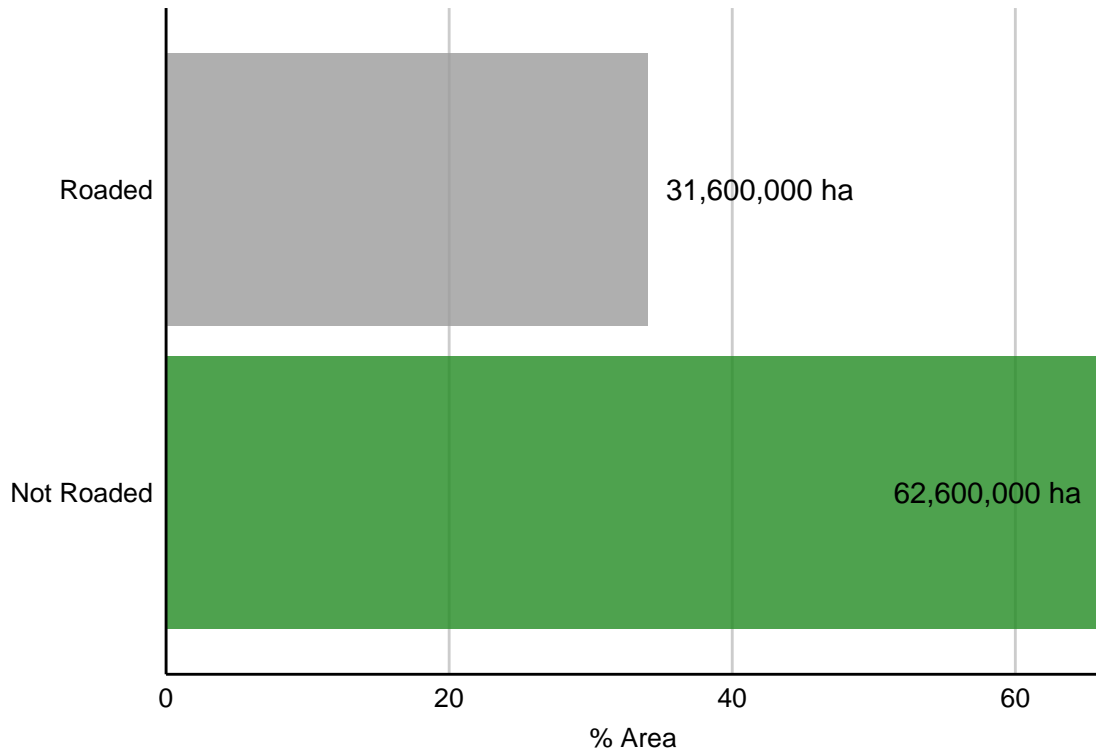
Roads in B.C.

- British Columbia has approximately 719,000 kilometres of roads, when including all road types that allow motorized vehicle use.
- Unpaved roads—which include all seasonal, loose and rough surfaced roads—contribute the most (92%) to the total length of roads in B.C.



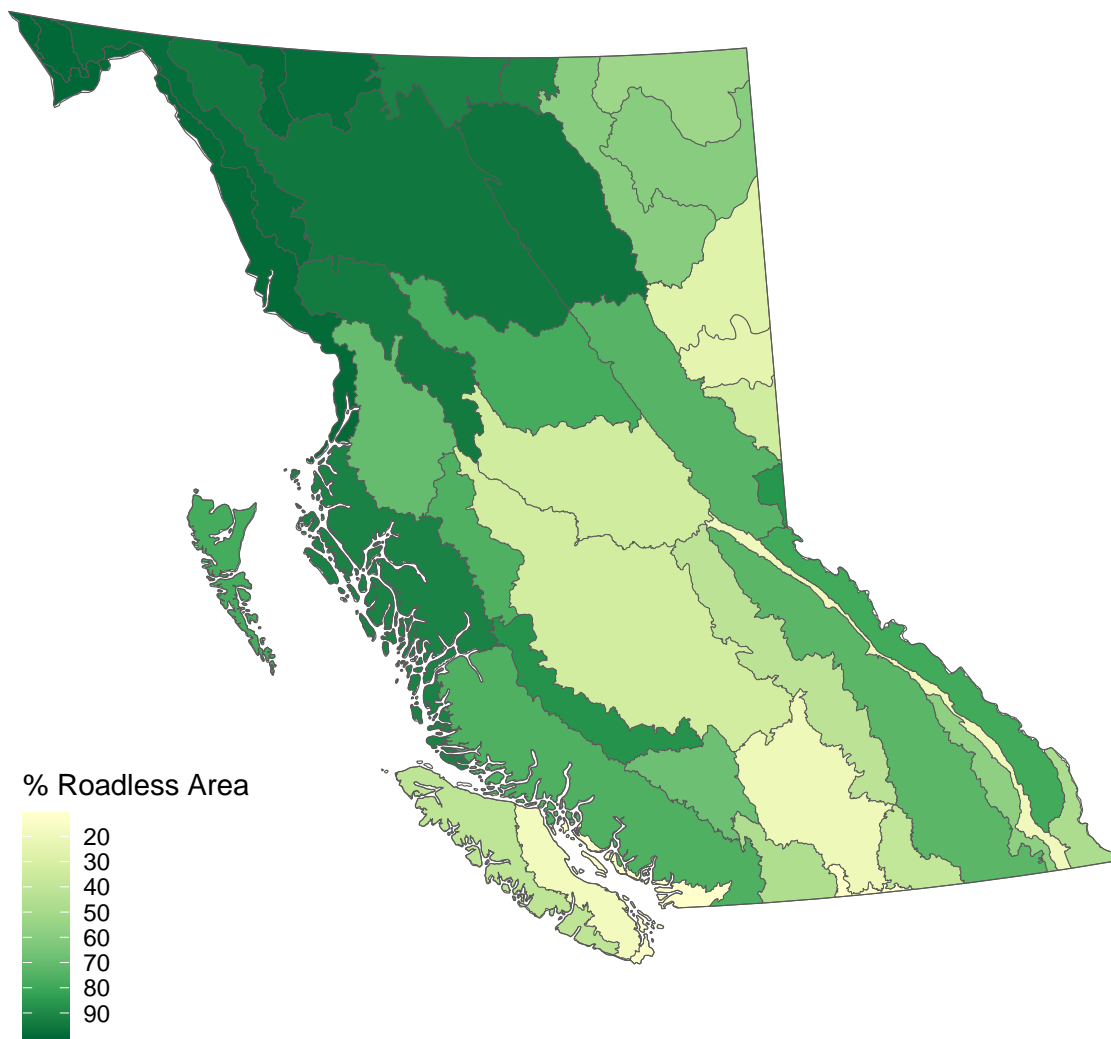
Roadless Areas in B.C.

- Sixty-six percent—or 62,600,000 hectares—of British Columbia’s landbase is roadless, defined as more than 500 metres from a road.



Roadless Areas within B.C.'s Ecoregions

- The amount and distribution of roadless areas vary considerably across B.C. Twenty seven of the 43 terrestrial [ecoregions](#) in B.C. are more than 50 percent roadless, while 6 ecoregions have less than 25 percent roadless area.
- As expected, ecoregions with high [population densities](#), and hence larger road networks, have the lowest amounts of remaining roadless area. For example, the Lower Mainland, Georgia-Puget Basin and Okanagan Highland ecoregions each have 13 percent roadless area (see the Appendix for individual ecoregion results).



Methods

This indicator is based on the B.C. [Digital Road Atlas](#) the best available single source of road data for British Columbia (accessed on May 1st, 2018). All paved roads and unpaved roads and trails that *allow* motorized vehicle use—as detailed in the [Digital Road Atlas Data Dictionary](#)—were included in the analysis. Some road features available in the [Digital Road Atlas](#) were excluded, including non-roads (ferry routes, proposed roads, pedestrian only roads, non-motorized trails and water access routes) and non-active roads (decommissioned and overgrown roads). The indicator presents a coarse-scale snapshot of the amount and distribution of roads in British Columbia—data completeness, data quality, road condition or intensity of road use were not evaluated. Roadless areas were determined by applying a 500 metre buffer on either side of all roads. A 500 metre buffer is a conservative value for determining influence and has been defined as the minimum zone of influence in a recent assessment of intact landscapes in Canada³. All results are reported to three significant figures. While the indicator results are broadly similar to previous road and roadless area analyses for British Columbia, the results among studies cannot be directly compared due to the use of different road data sources and methodologies^{2,4}.

The [R](#) code for repeating the analysis and data visualizations presented on this page is available on [GitHub](#).

References and Other Useful Links

- [B.C. Digital Road Atlas](#)
- [Biodiversity B.C.](#)
- ¹Trombulak, S.C. and C.A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. *Conservation Biology*. 14: 18-30. DOI: [10.1046/j.1523-1739.2000.99084.x](#)
- ²B.C. Forest Practices Board. 2015. [Access Management and Resource Roads: 2015 Update](#). FPB/SR/49.
- ³Lee, P.G., M. Hanneman, J.D. Gysbers, R. Cheng and W. Smith. 2010. *Atlas of Canada's Intact Forest Landscapes*. Edmonton, Alberta: Global Forest Watch Canada 10th Anniversary Publication #1. 74 pp.
- ⁴British Columbia. Ministry of Environment. 2007. [Environmental Trends in British Columbia: 2007](#). Ministry of Environment, State of Environment Reporting.

Data

*By accessing these datasets, you agree to the licence associated with each file, as indicated in parentheses below.

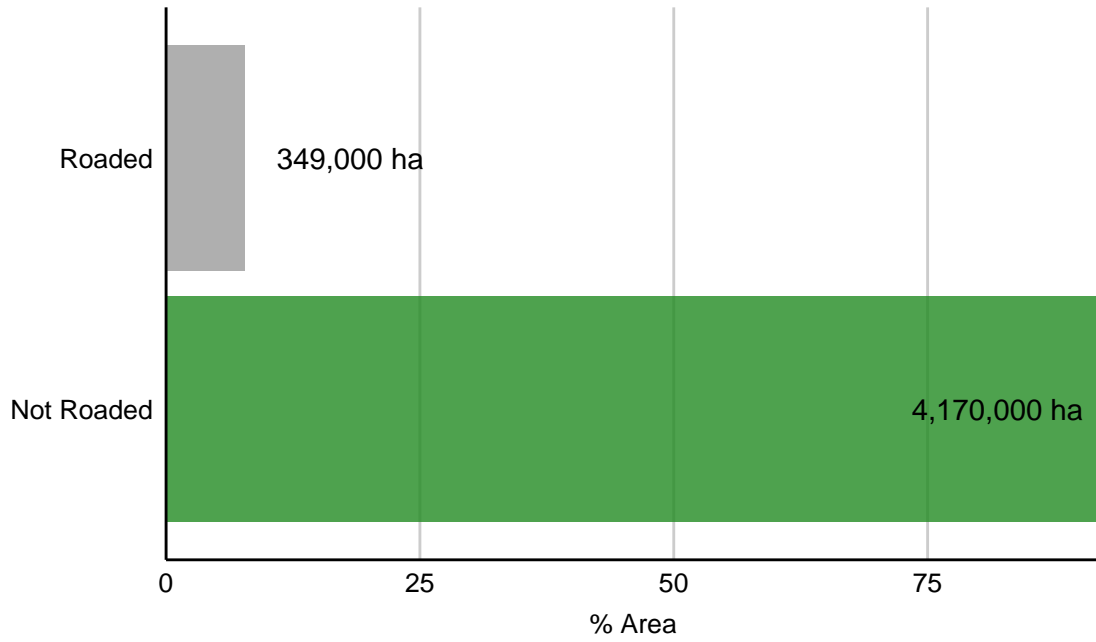
- [Indicator Summary Data: Amount of Roaded & Roadless Area by Ecoregion in B.C.](#) (Licence: [Open Government Licence - British Columbia](#))
- [Digital Road Atlas \(DRA\) - Master Partially-Attributed Roads](#) (Licence: [B.C. Crown Copyright](#))
- [Ecoregions - Ecoregion Ecosystem Classification of British Columbia](#) (Licence: [Open Government Licence - British Columbia](#))

Published and Available On-Line at Environmental Reporting BC (May 2018): <http://www.env.gov.bc.ca/soe/land/roads.html>

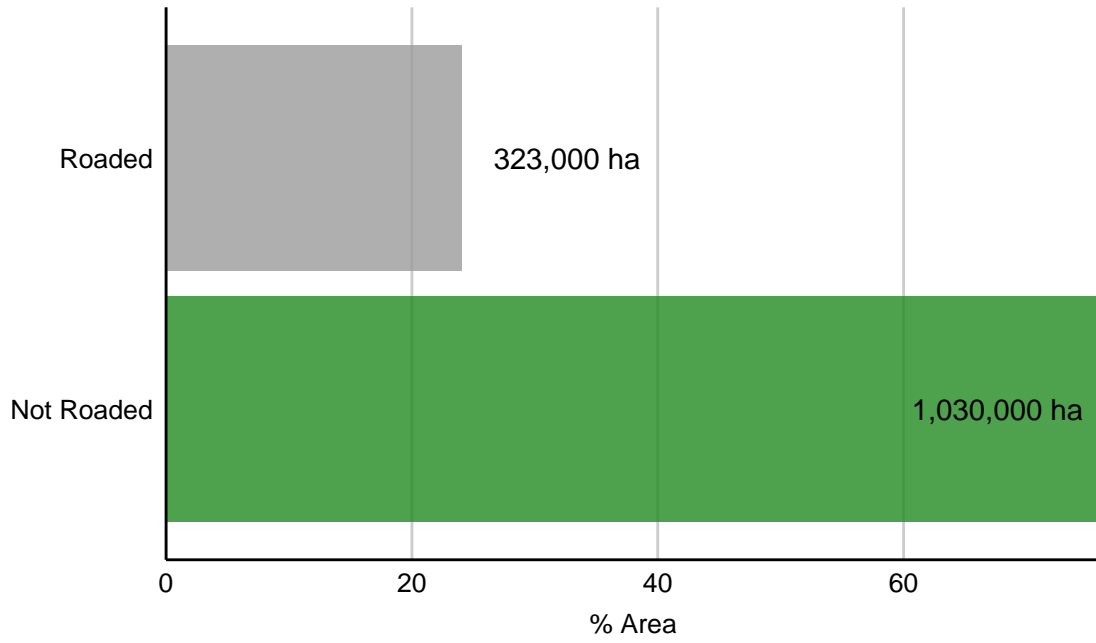
Email correspondence to: envreportbc@gov.bc.ca

APPENDIX: Roadless Area Summaries for Each Ecoregion in B.C.

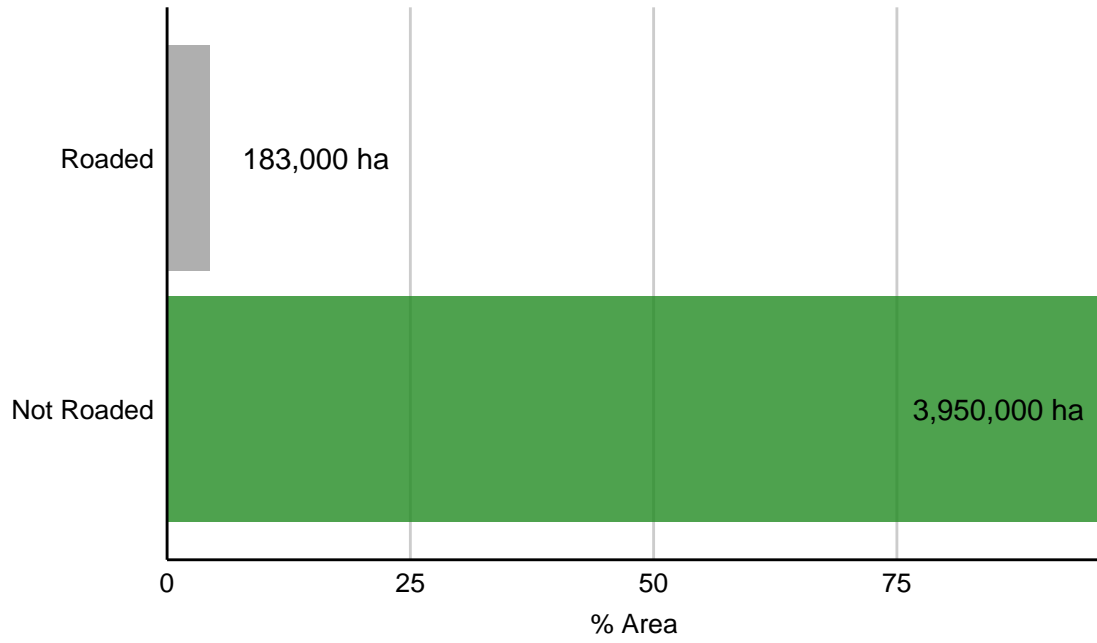
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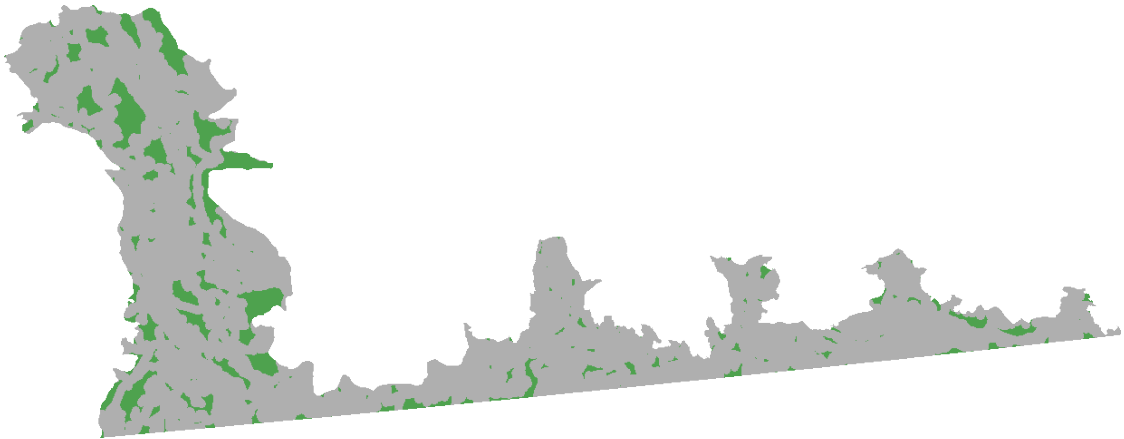
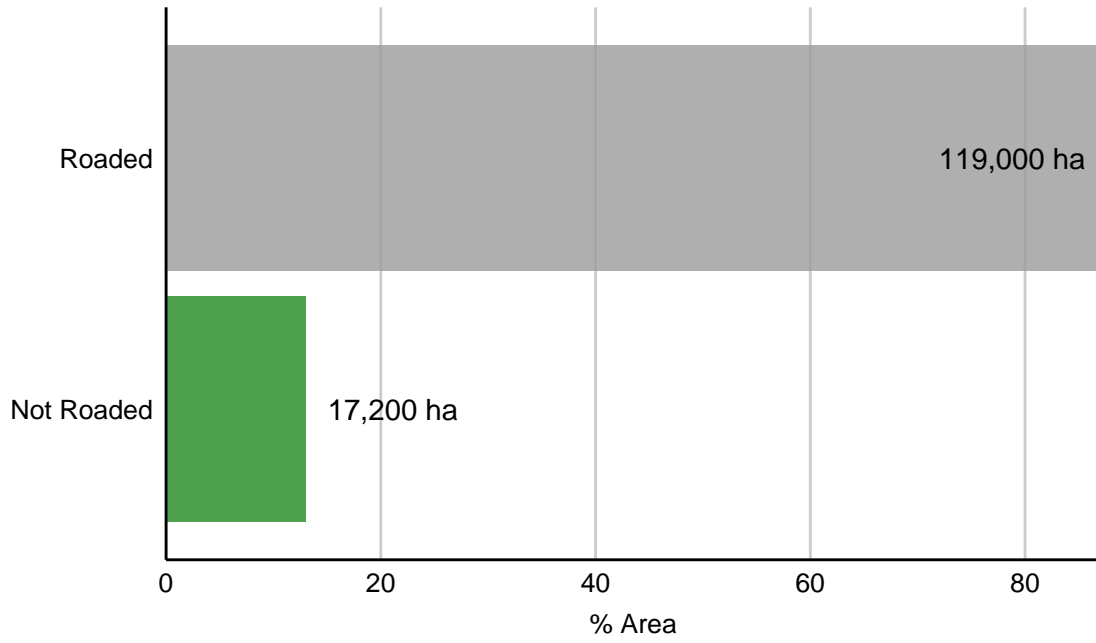
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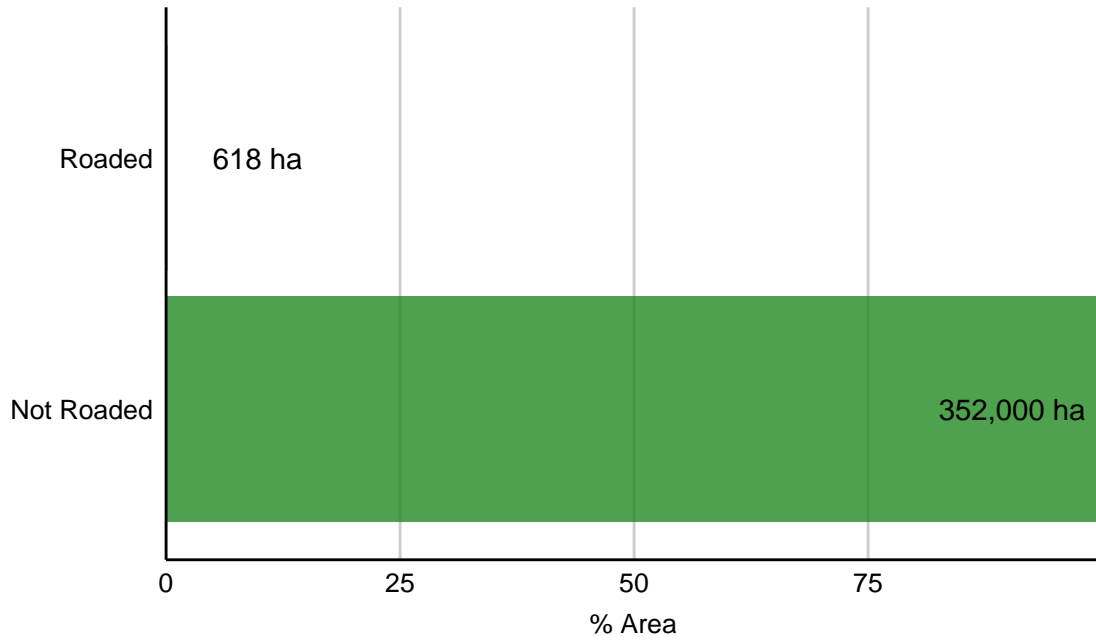
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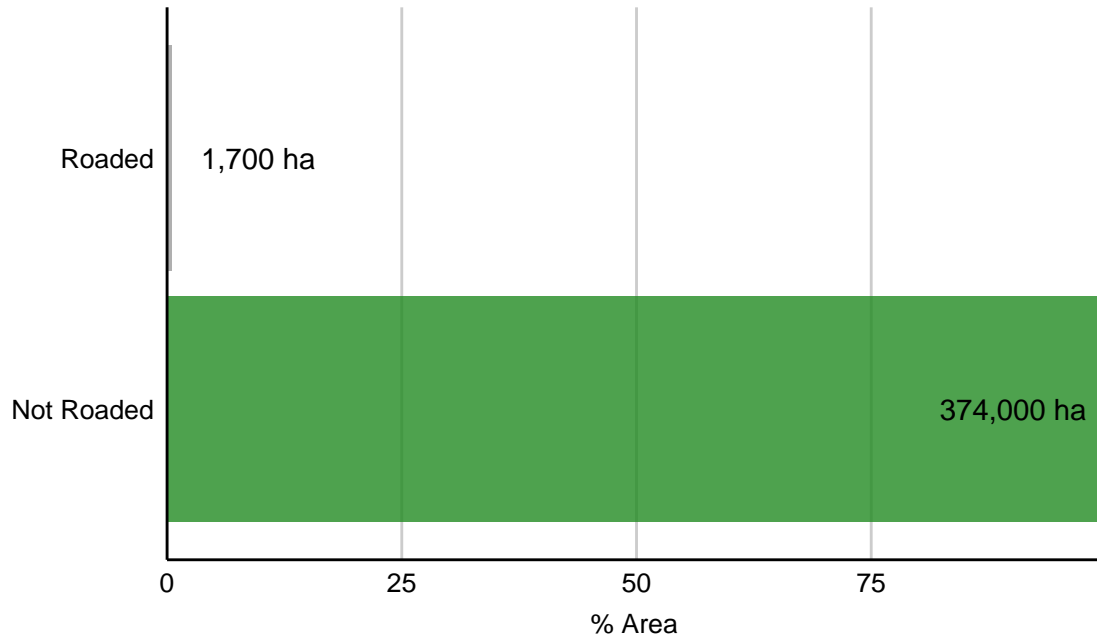
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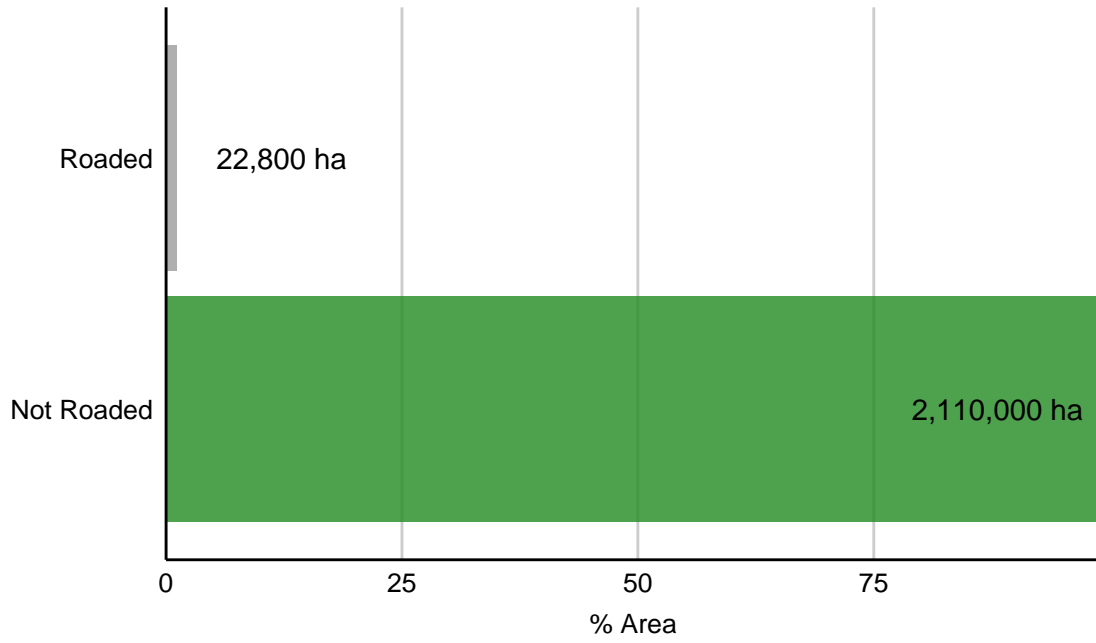
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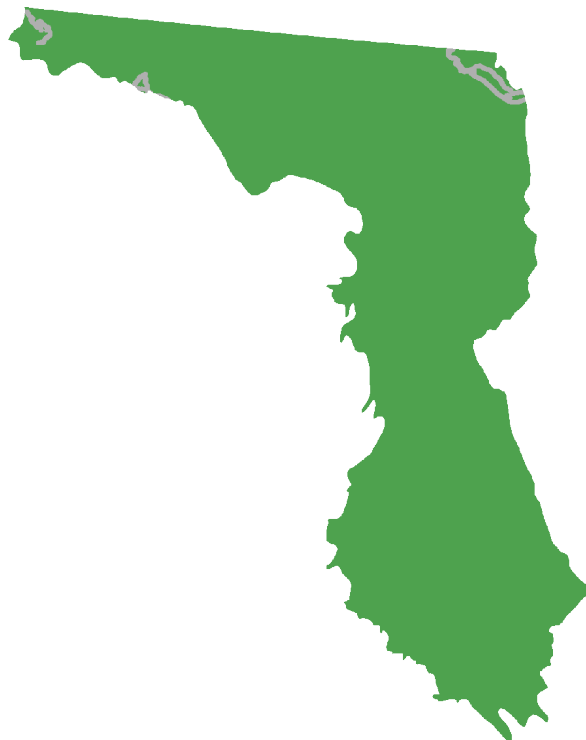
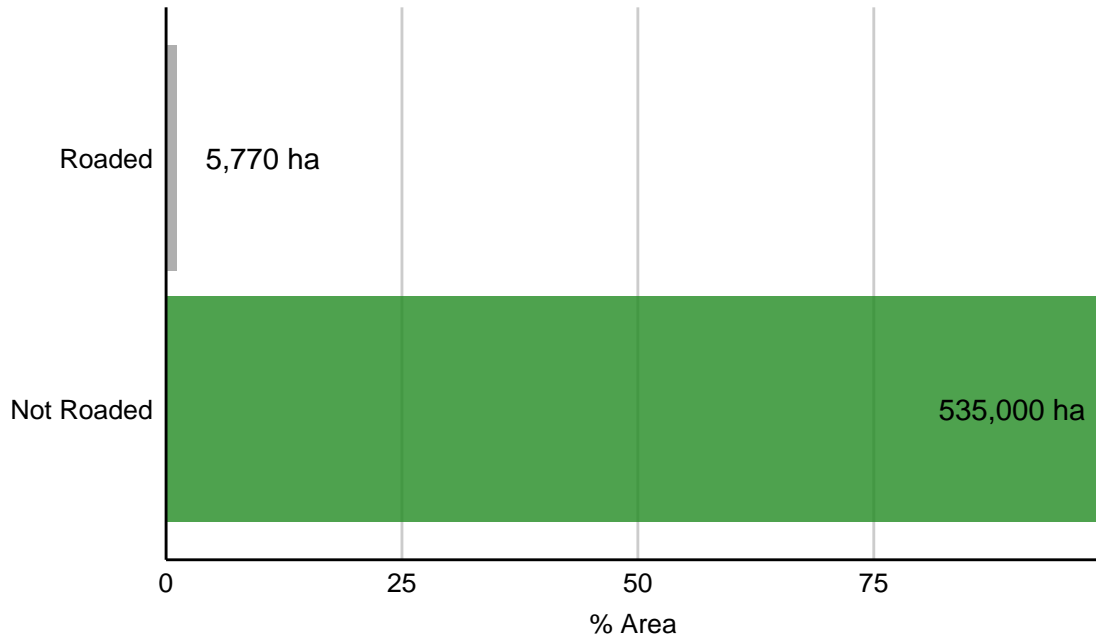
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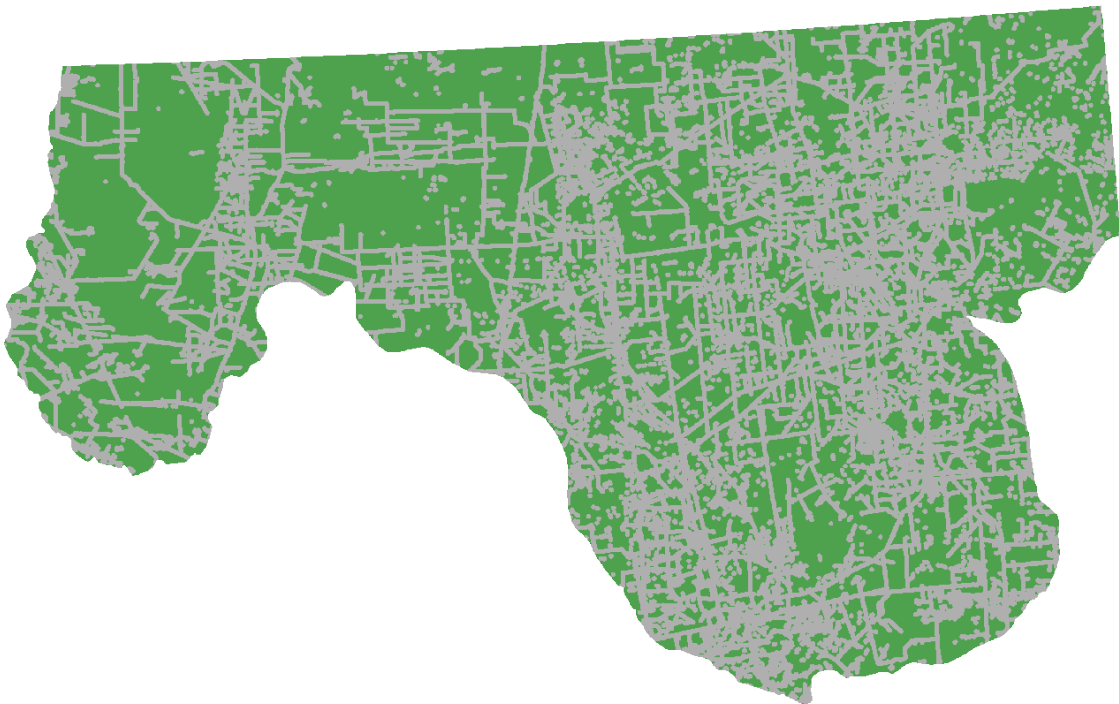
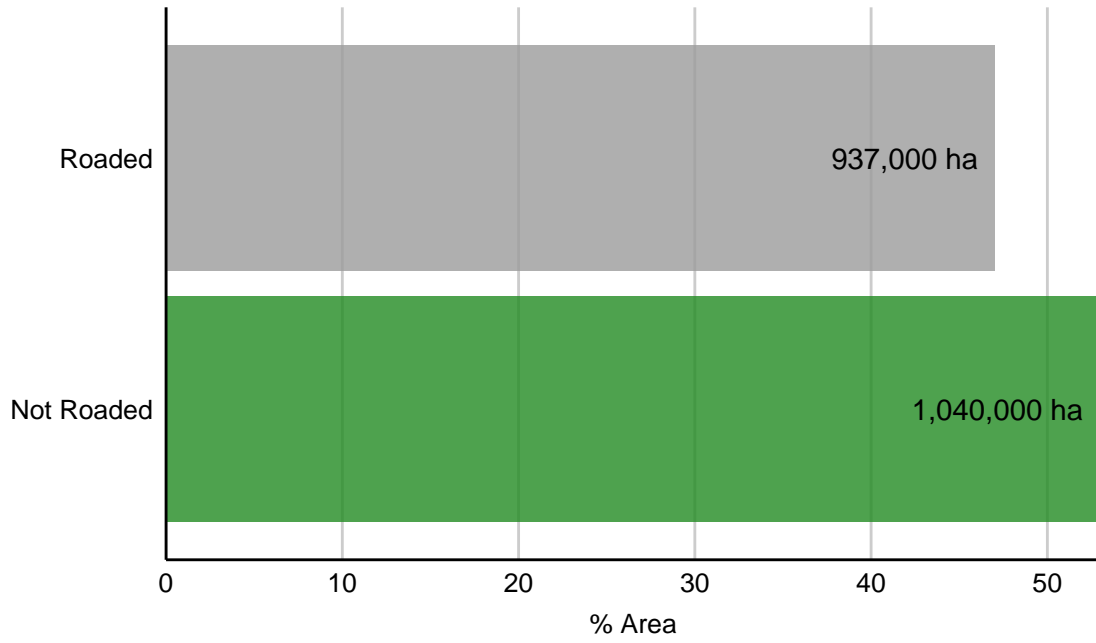
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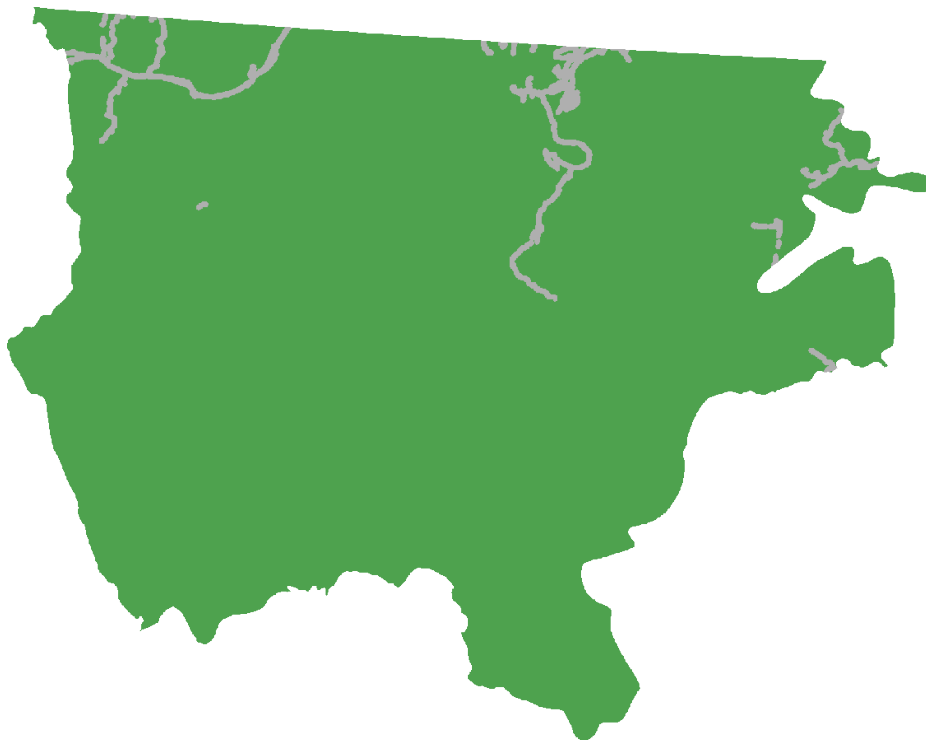
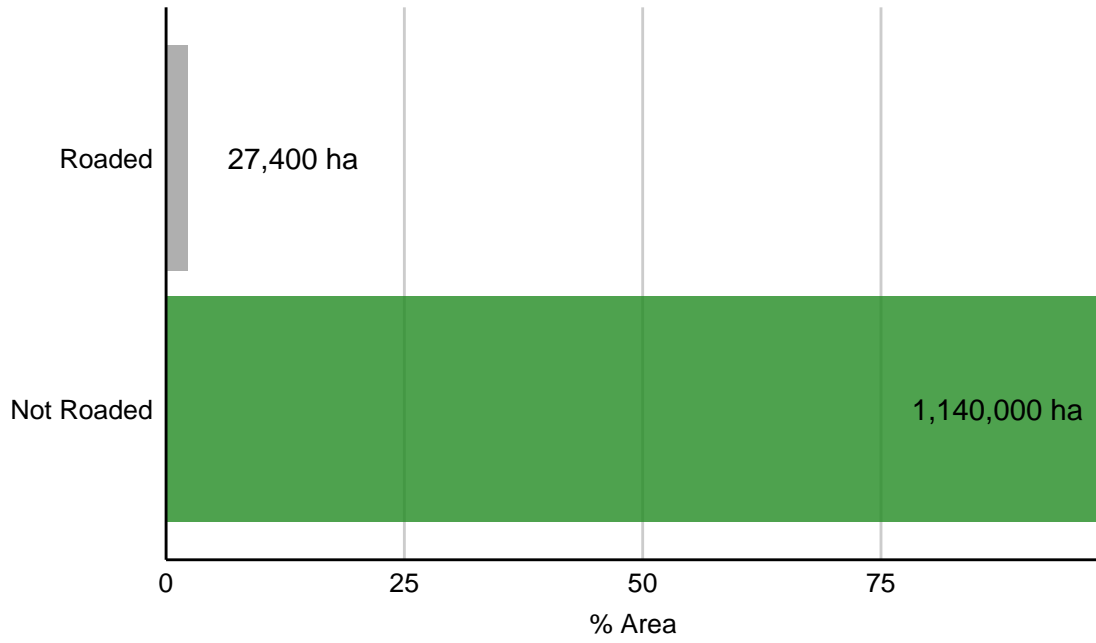
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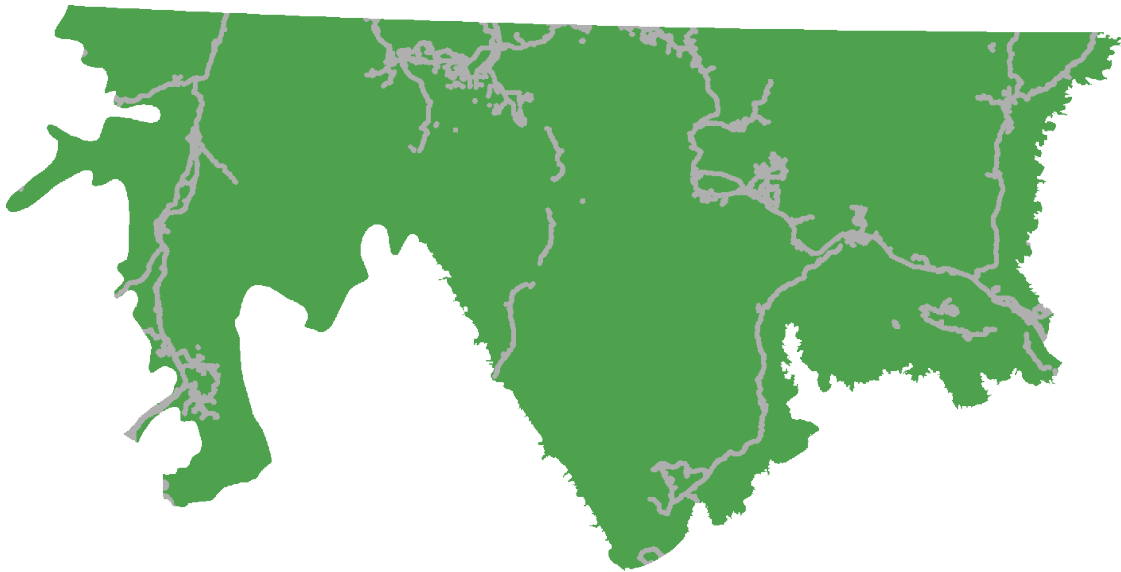
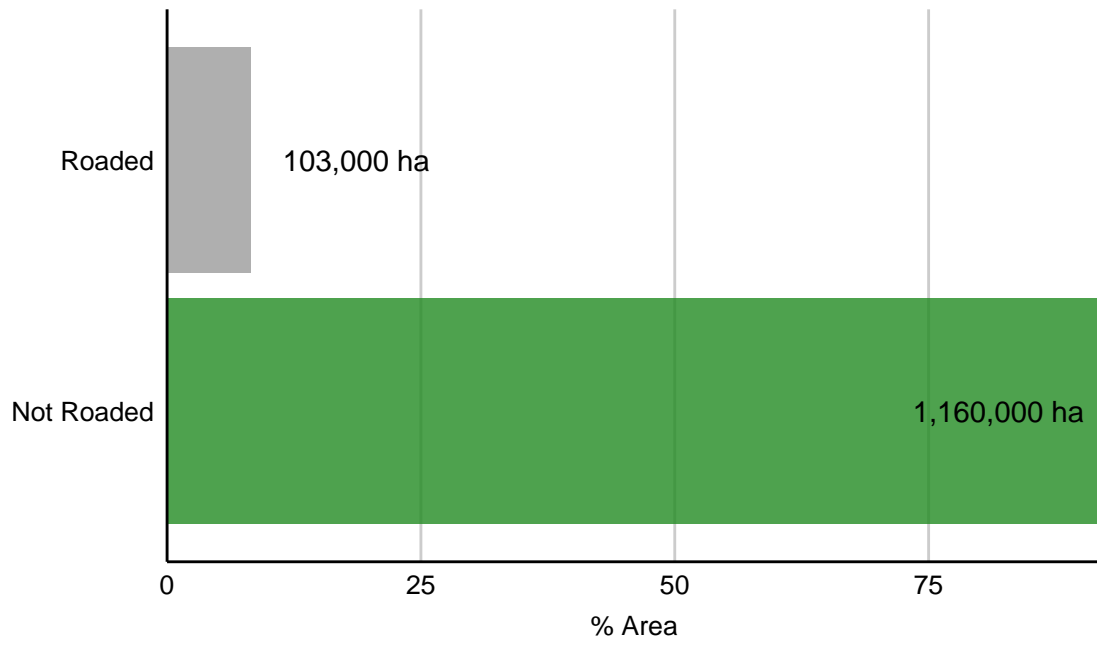
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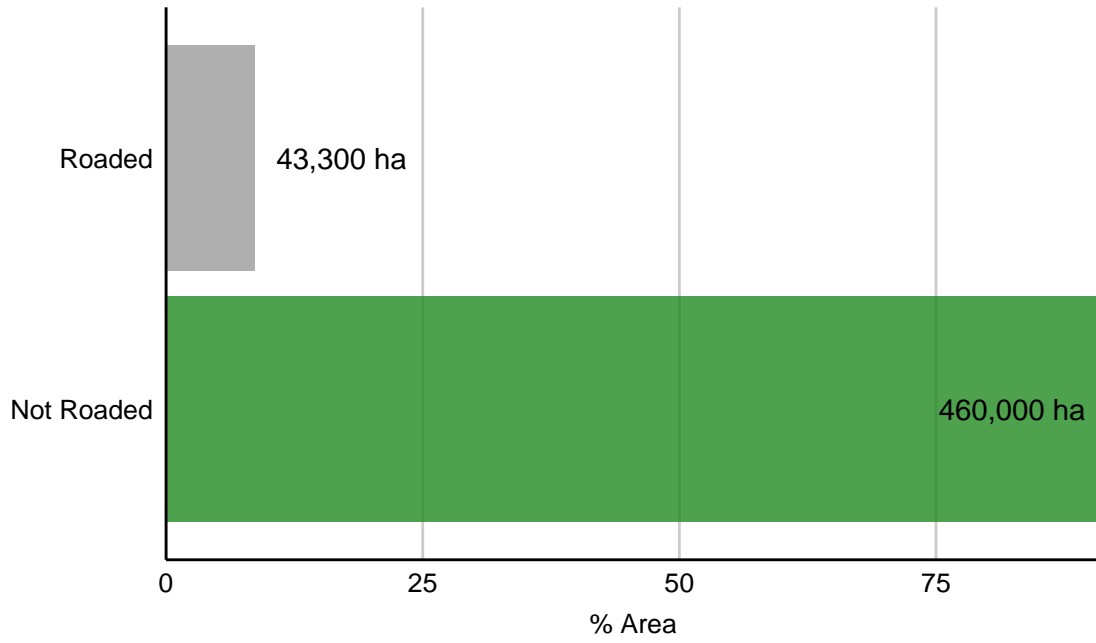
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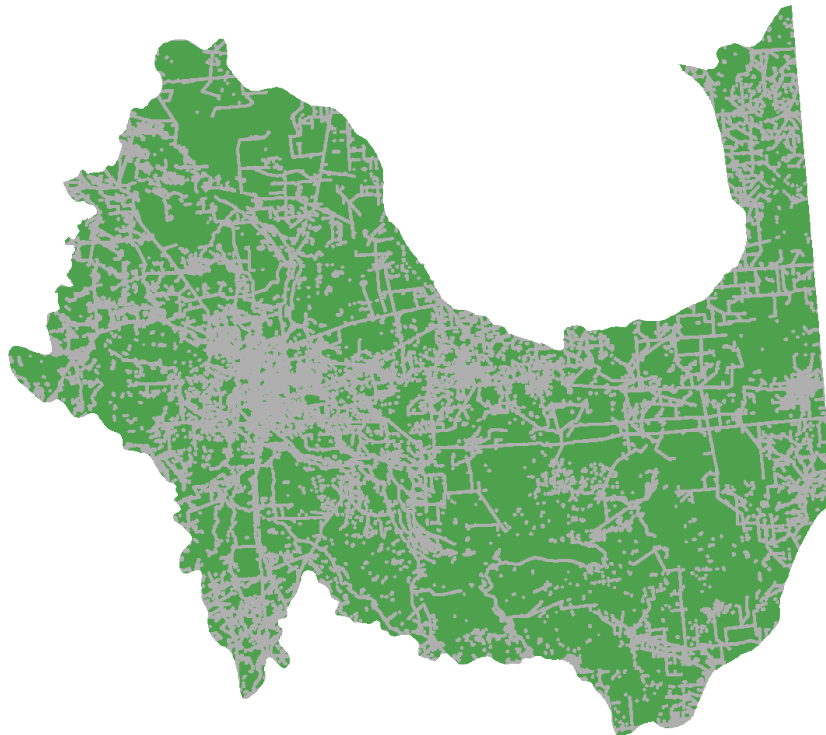
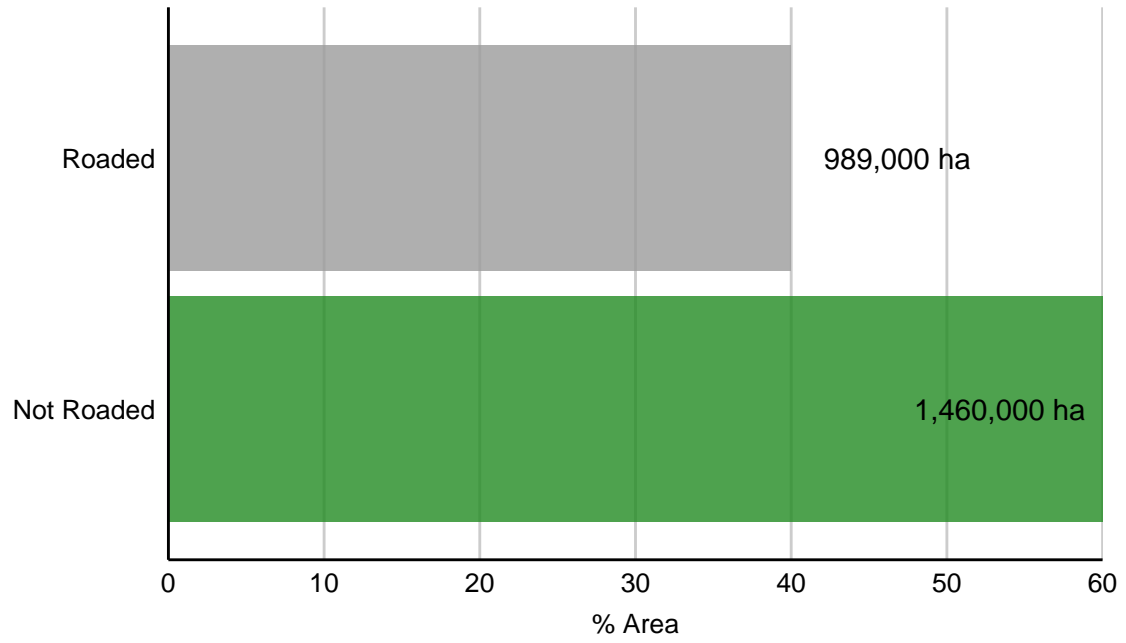
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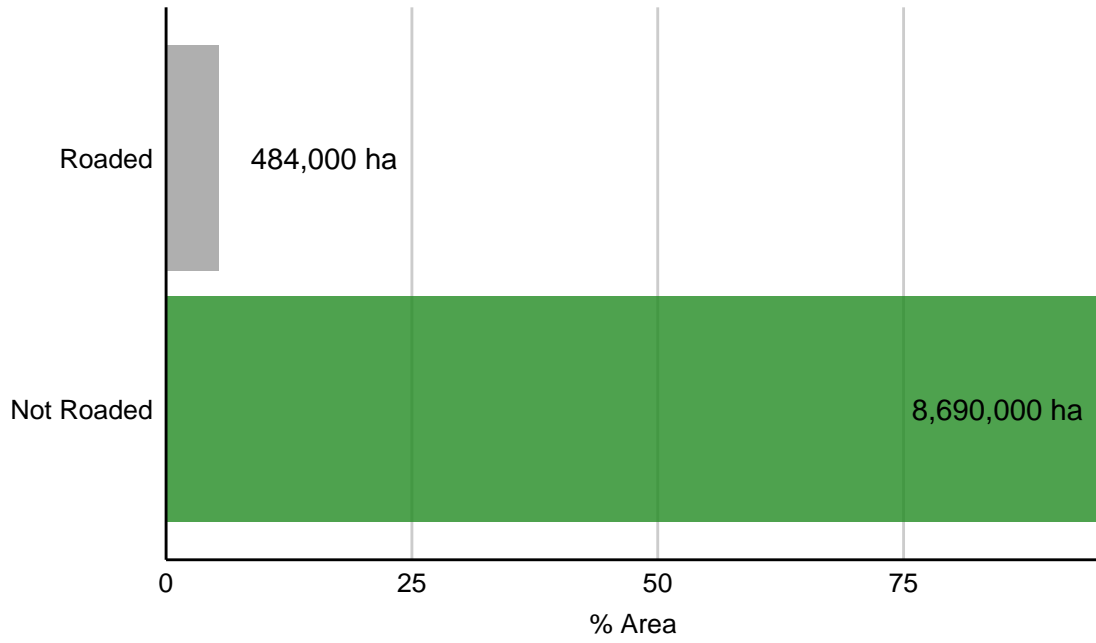
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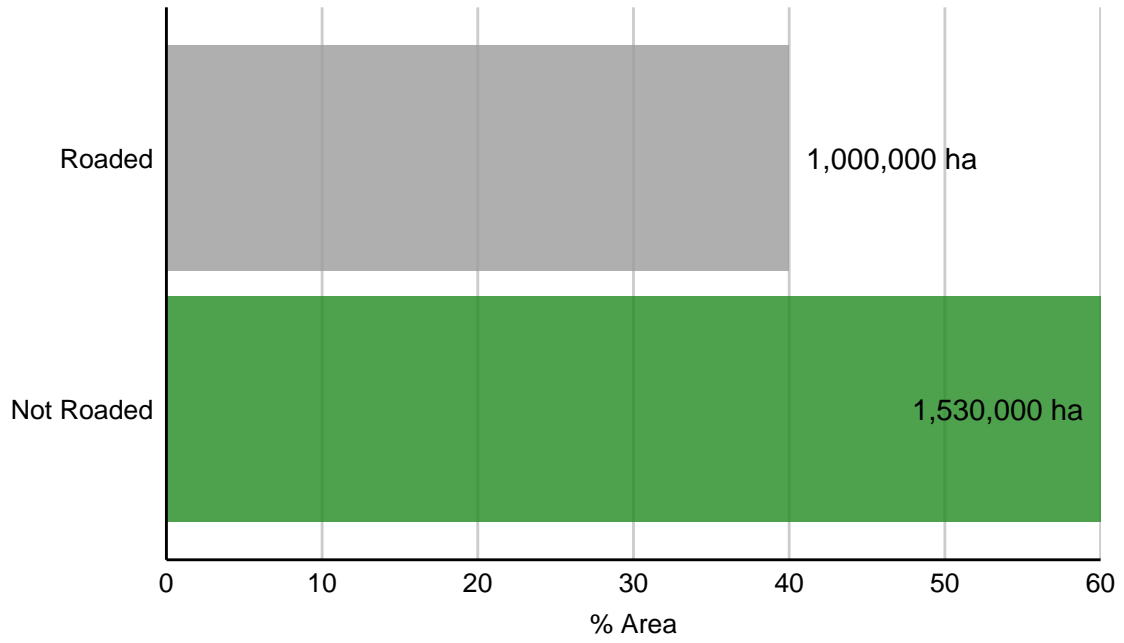
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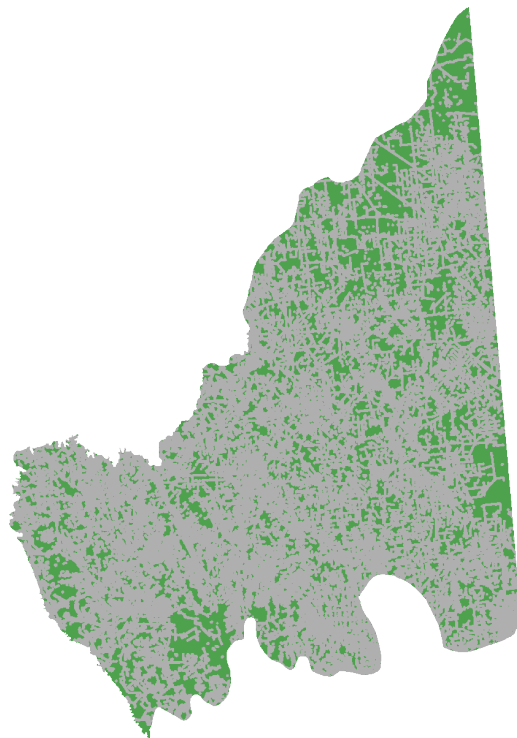
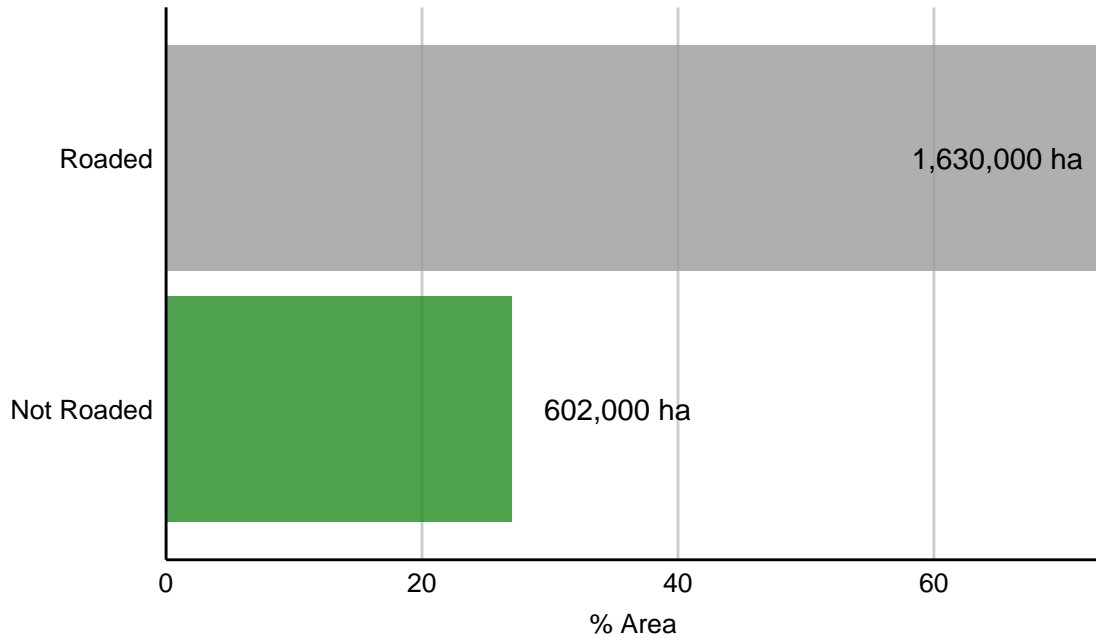
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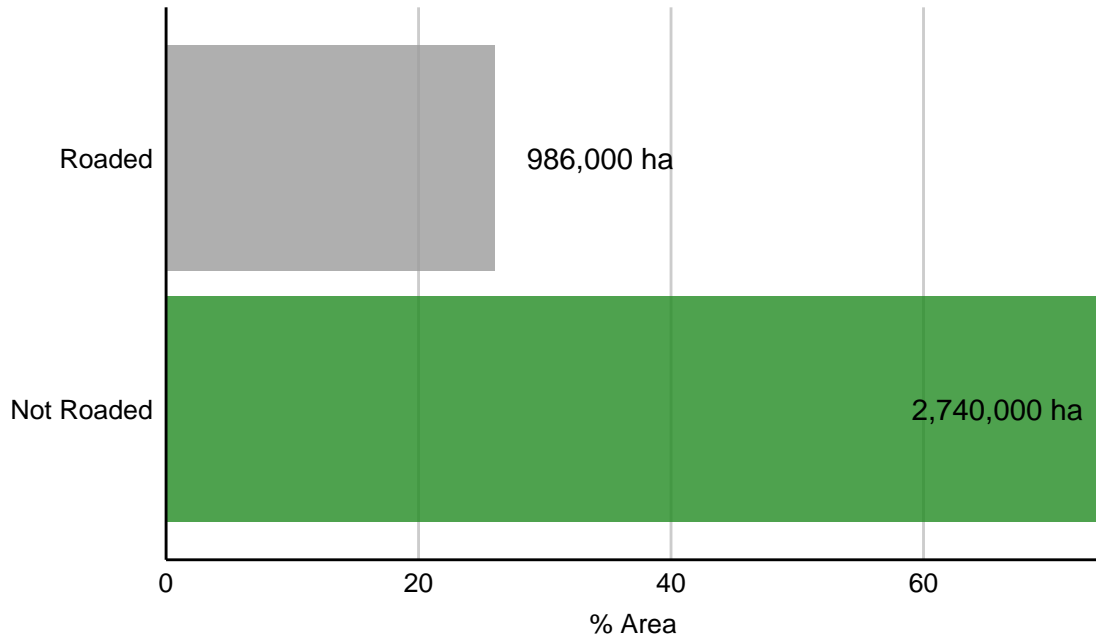
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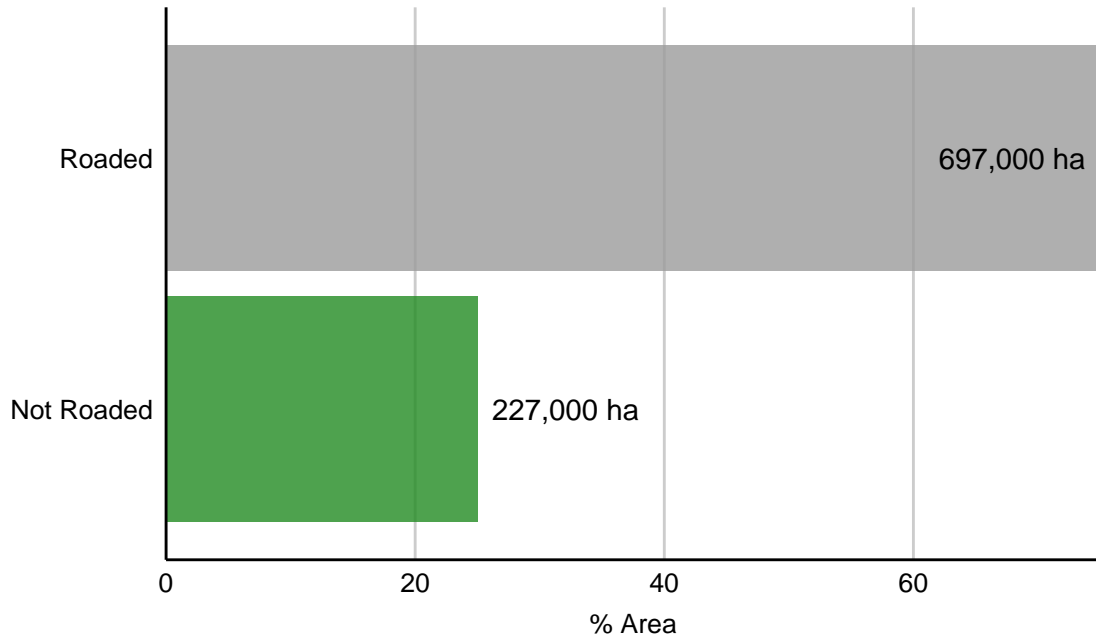
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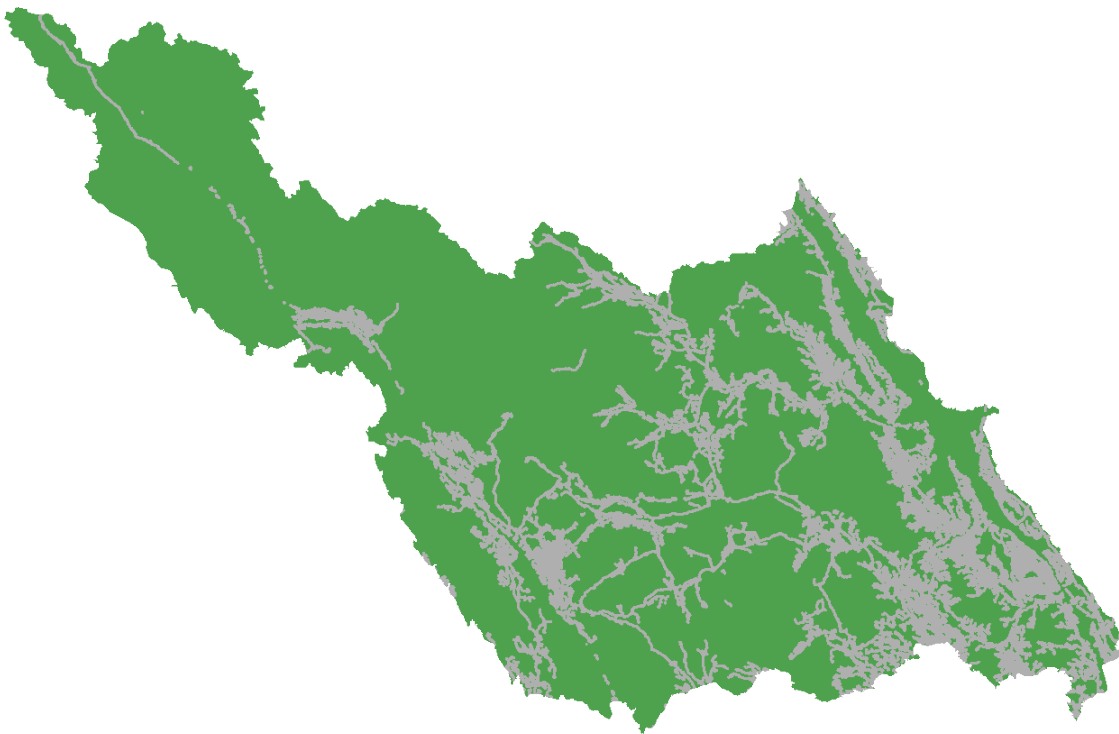
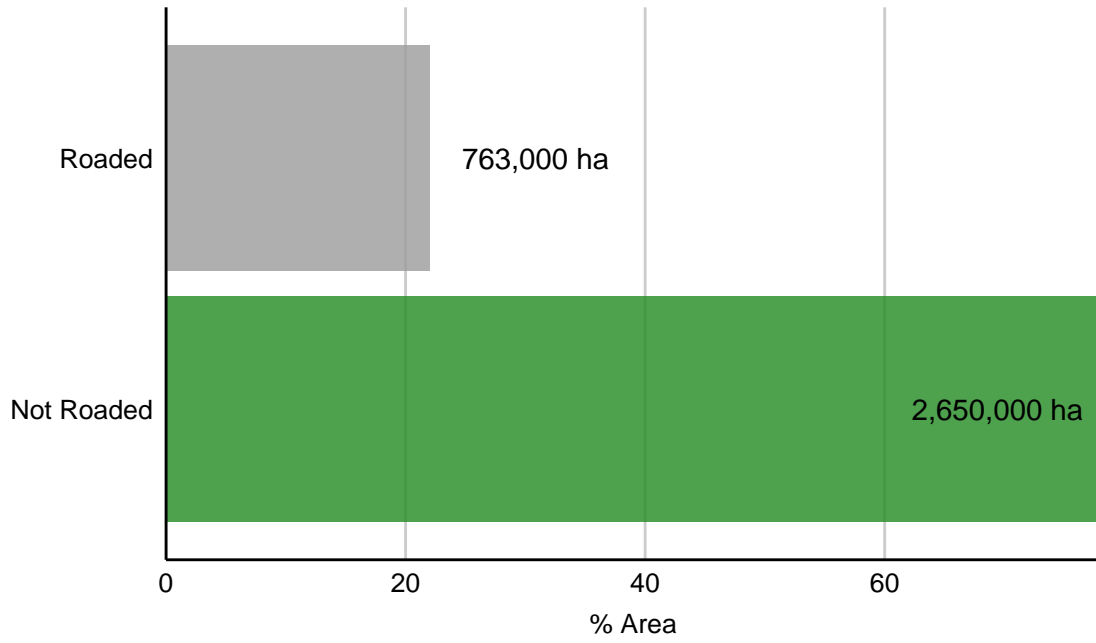
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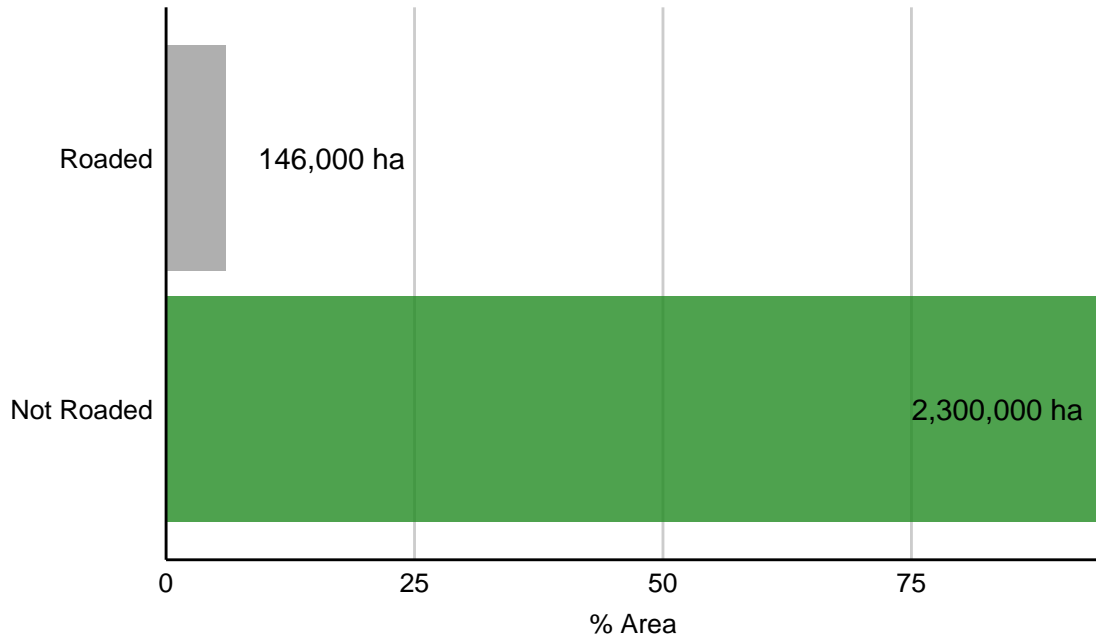
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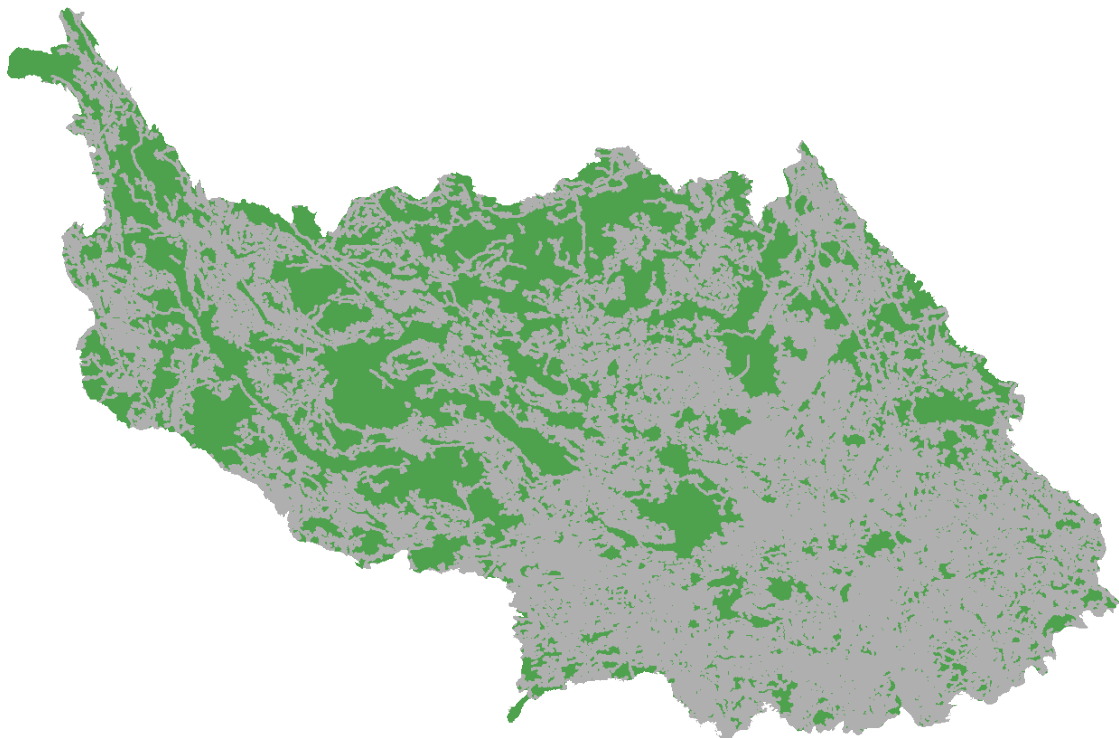
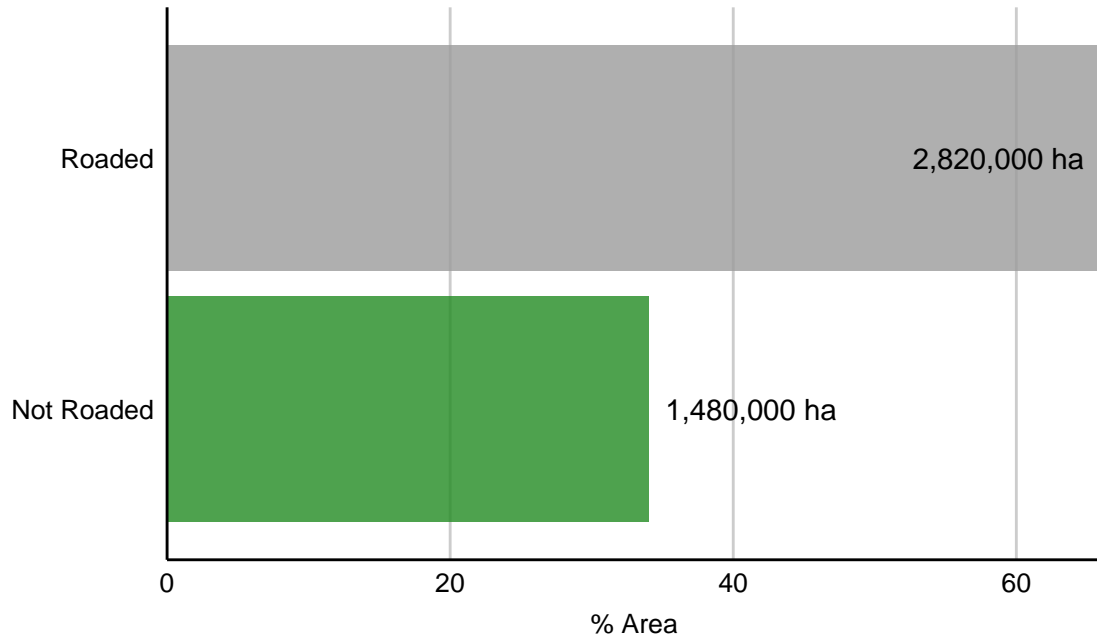
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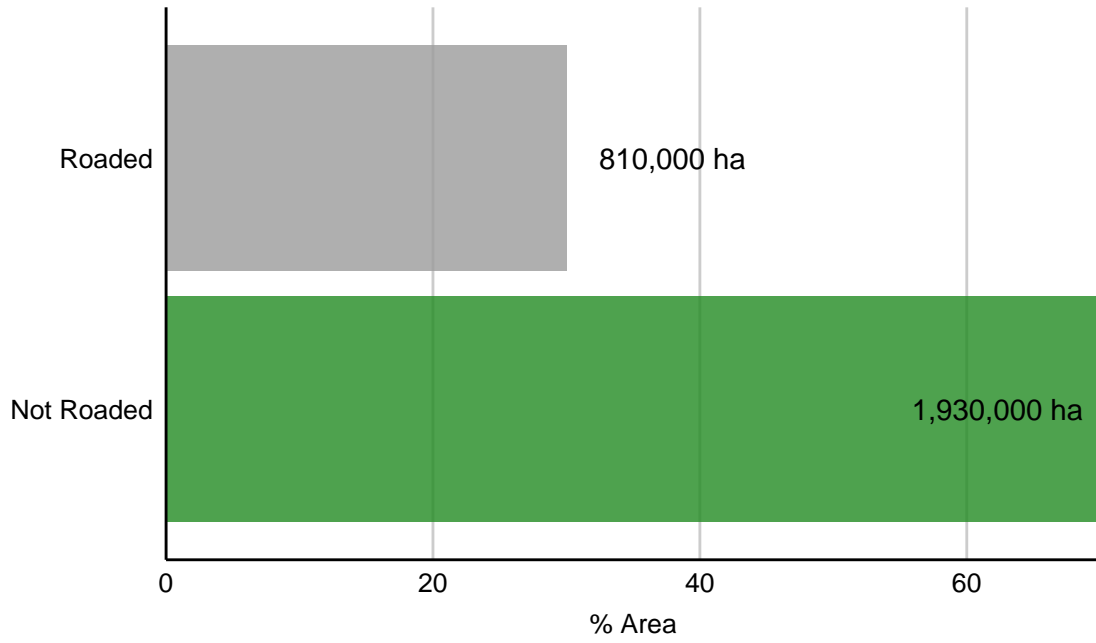
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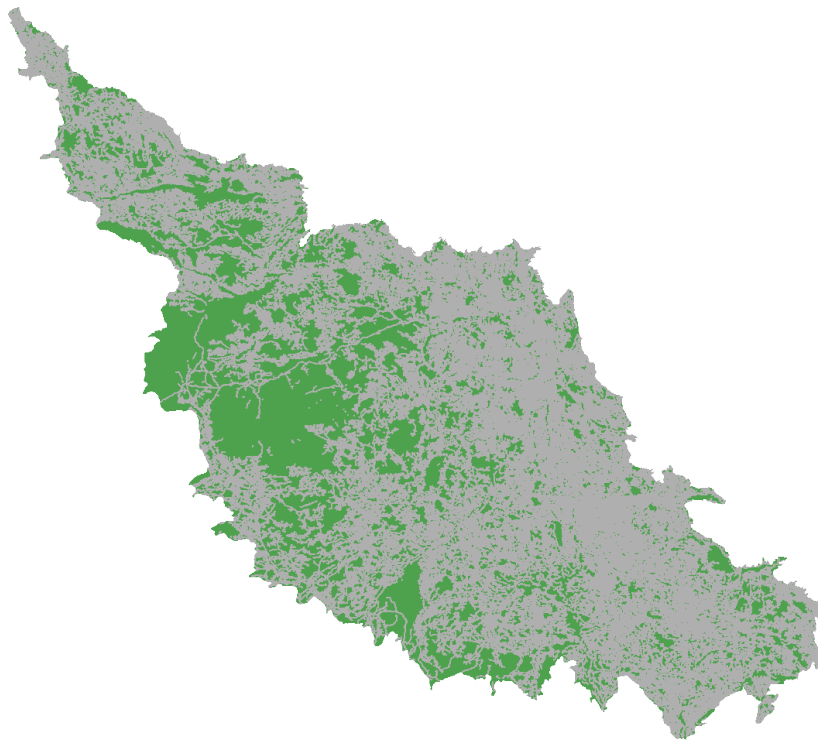
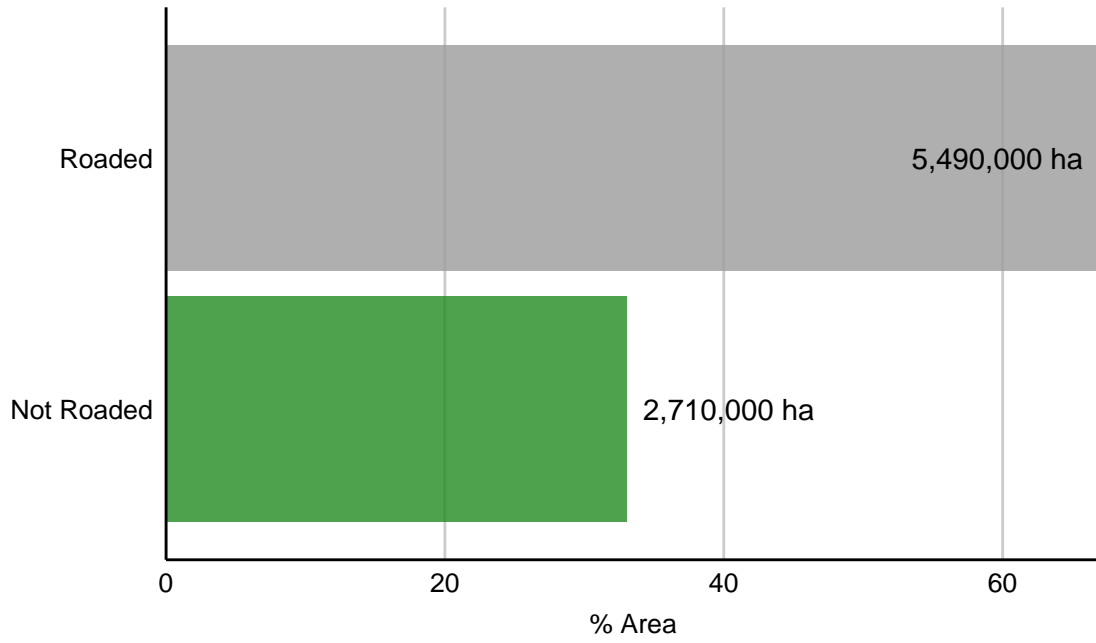
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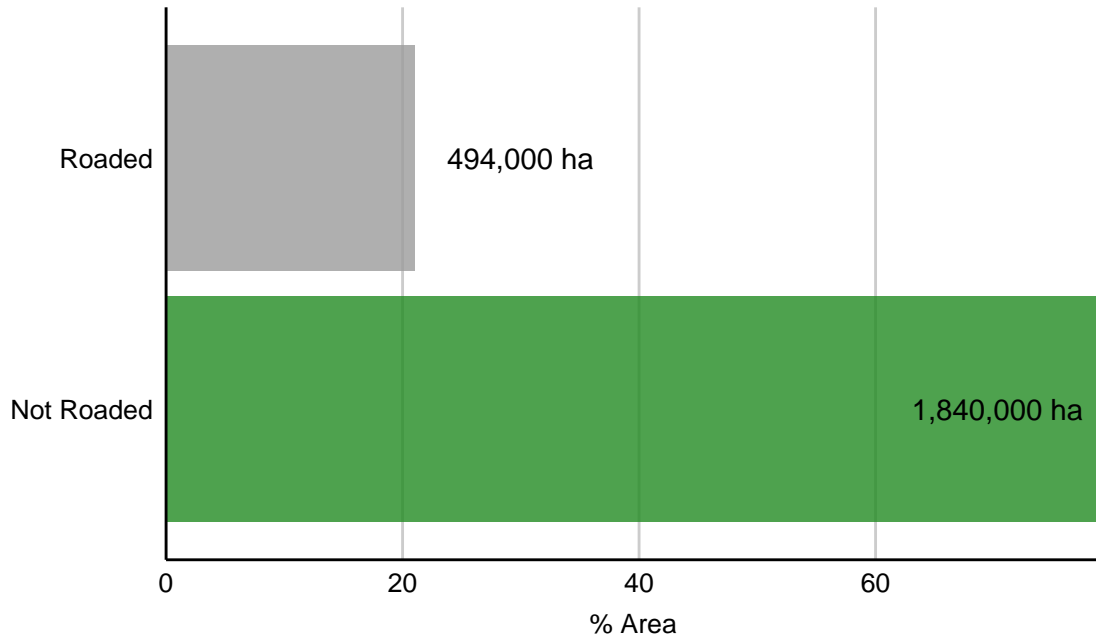
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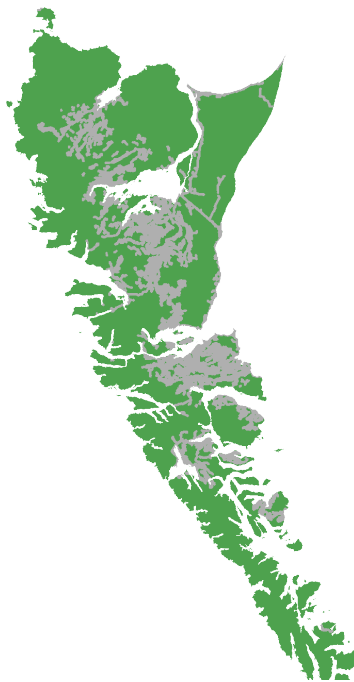
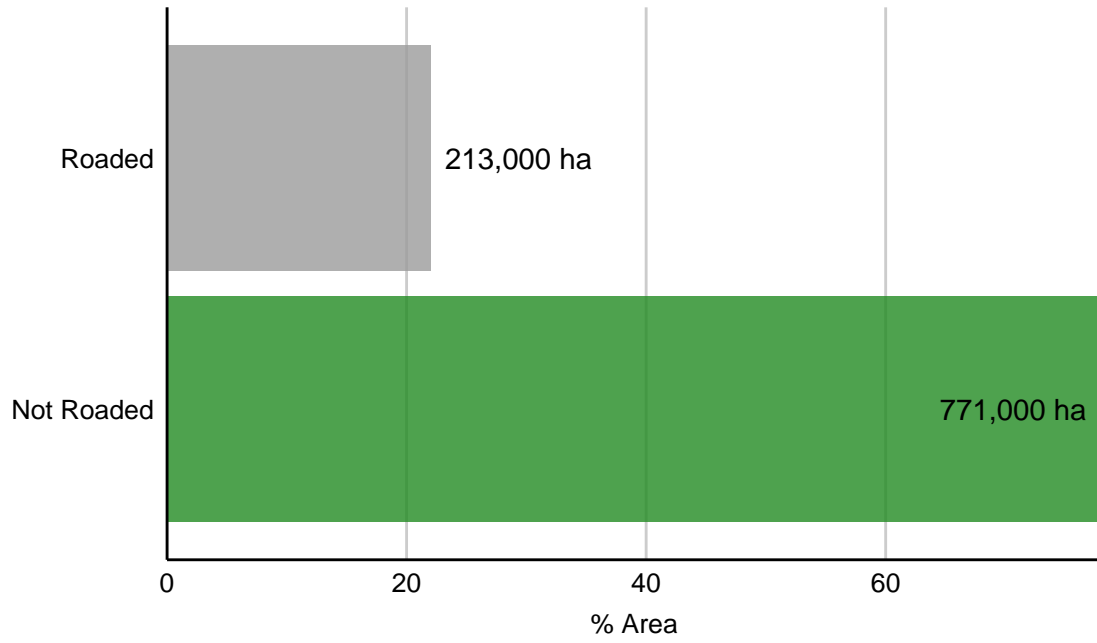
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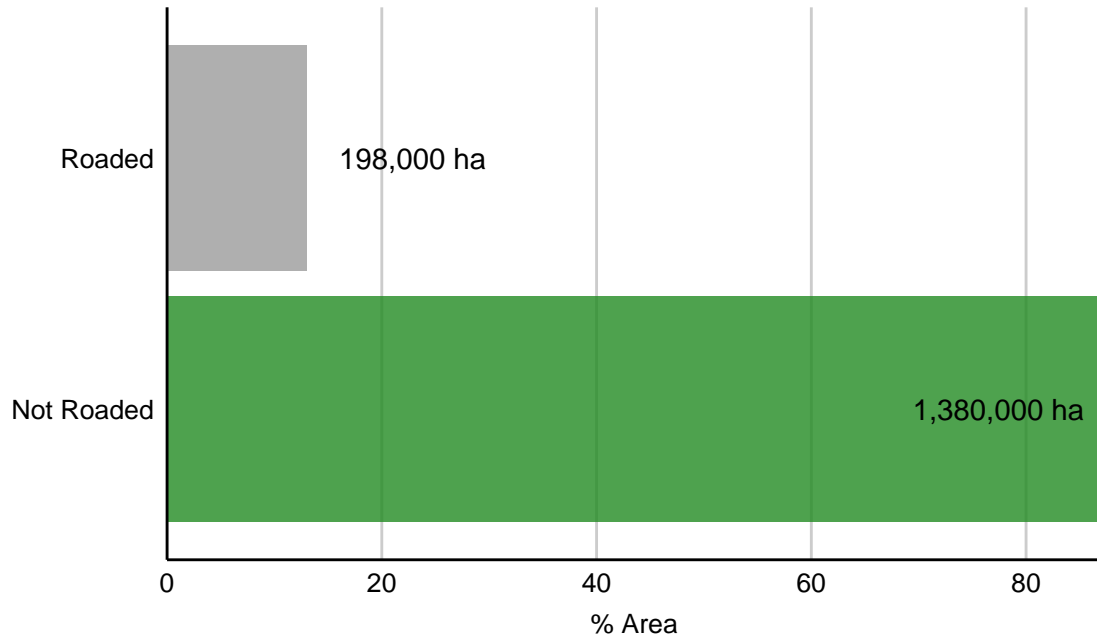
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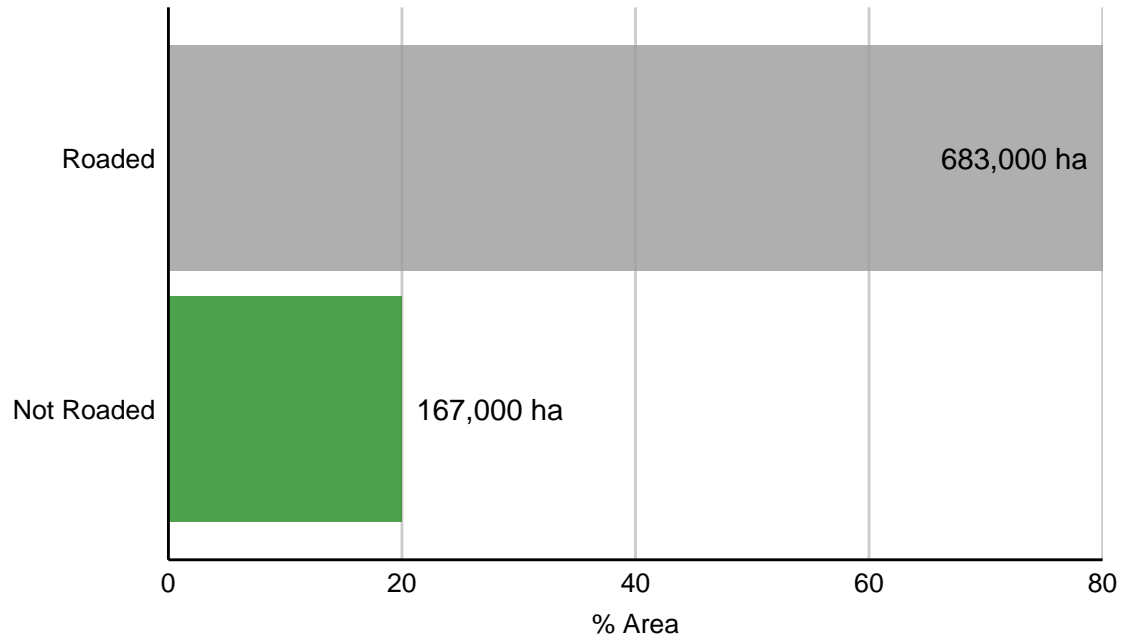
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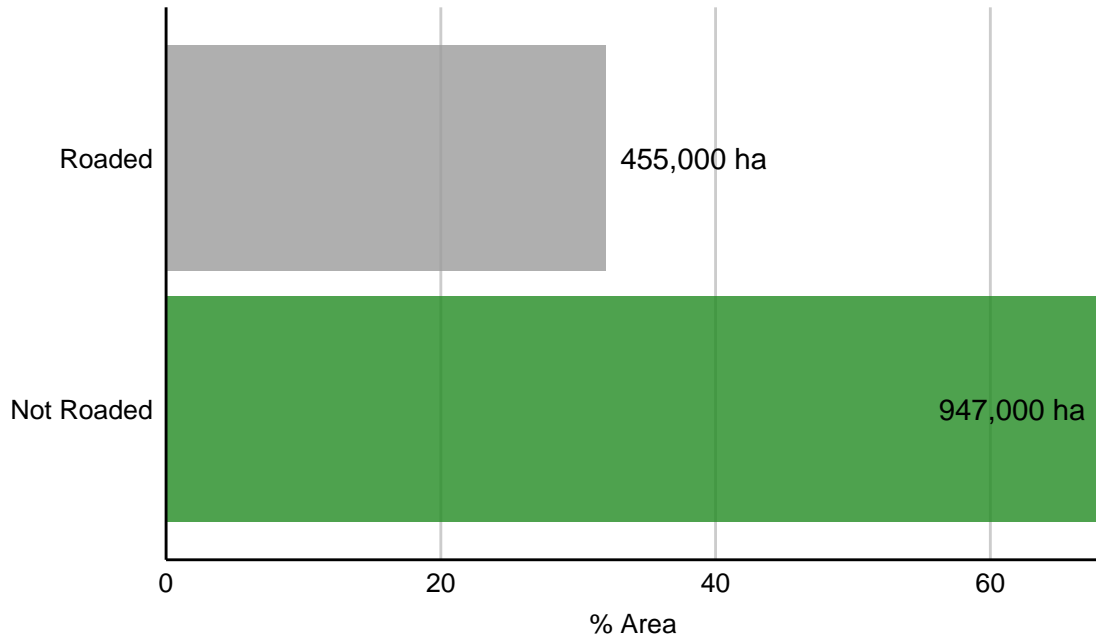
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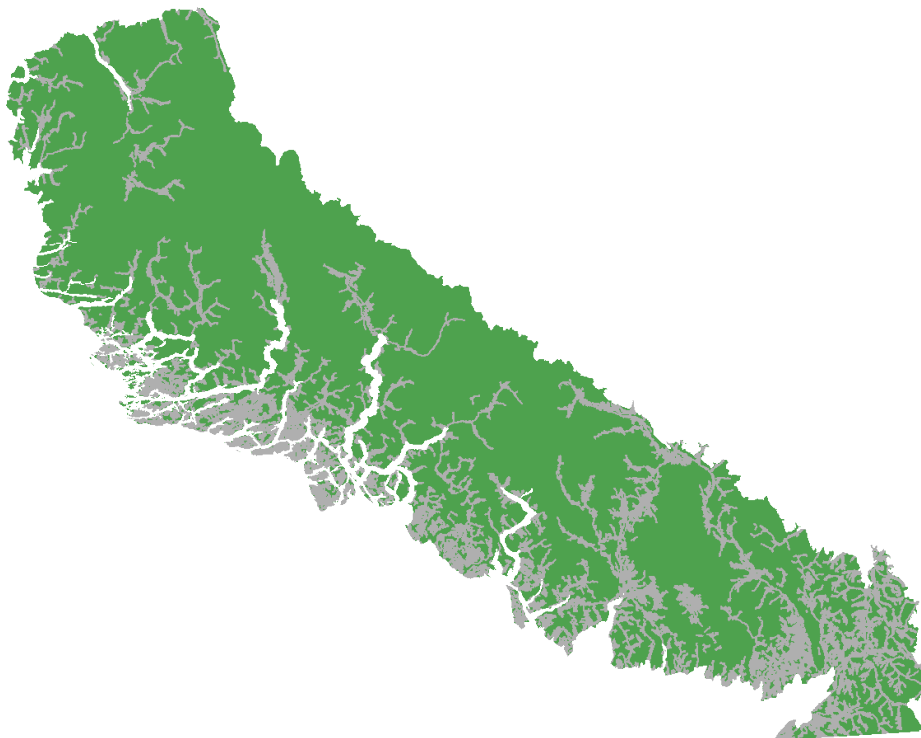
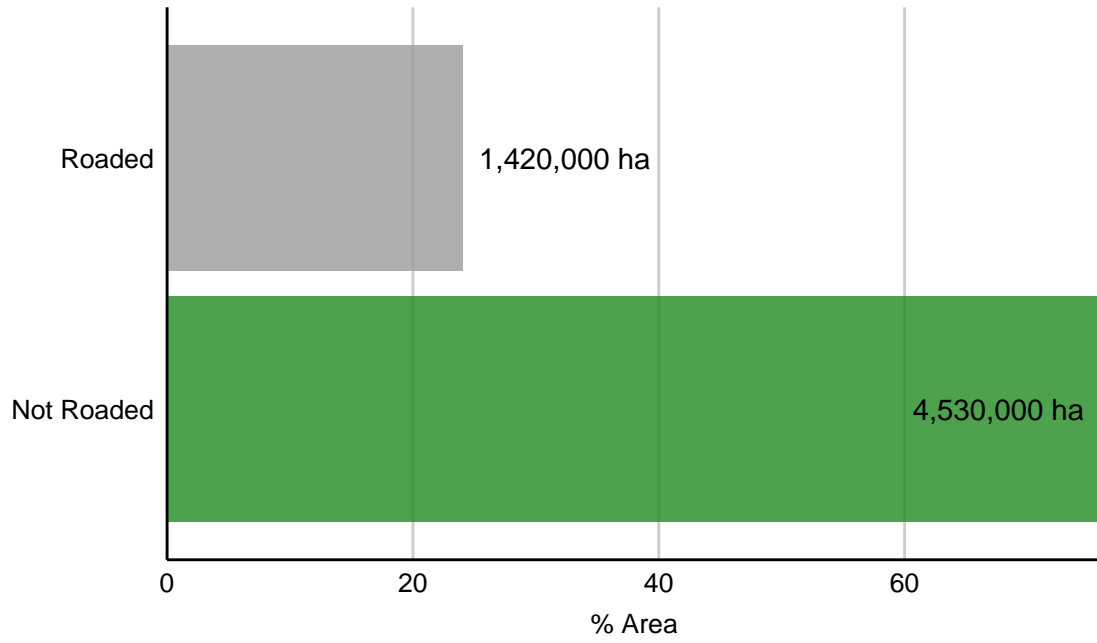
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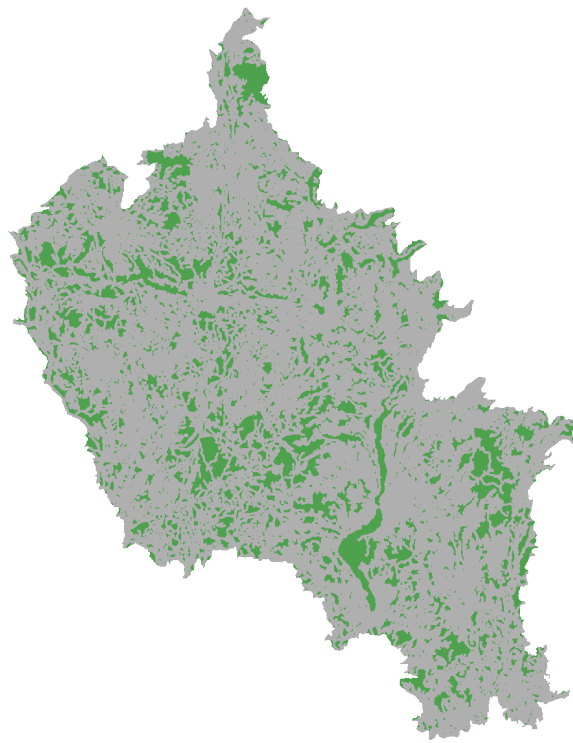
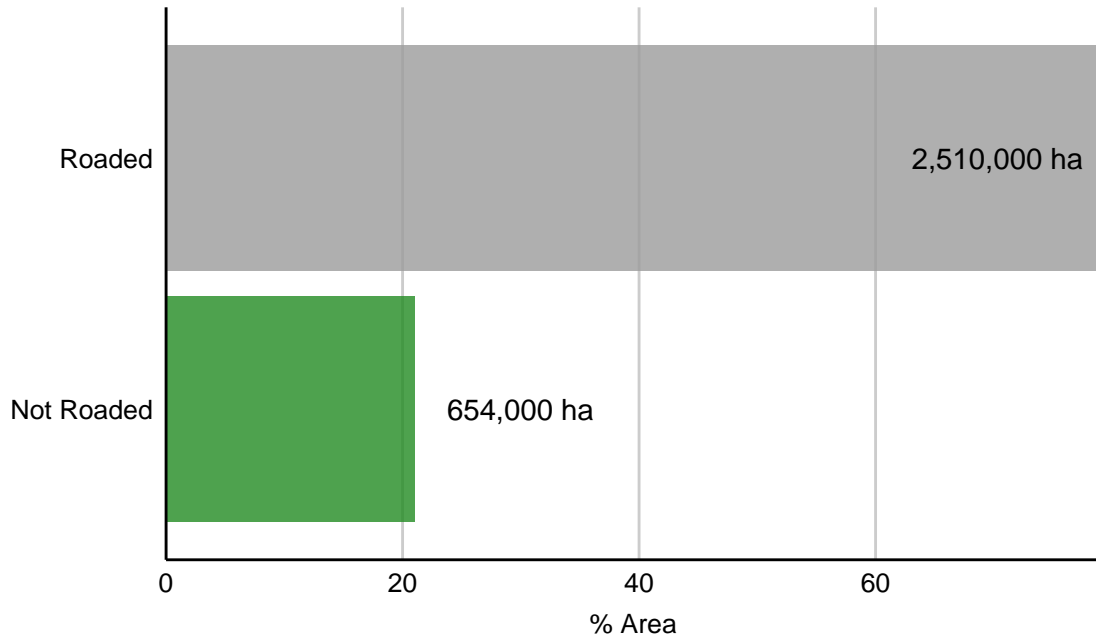
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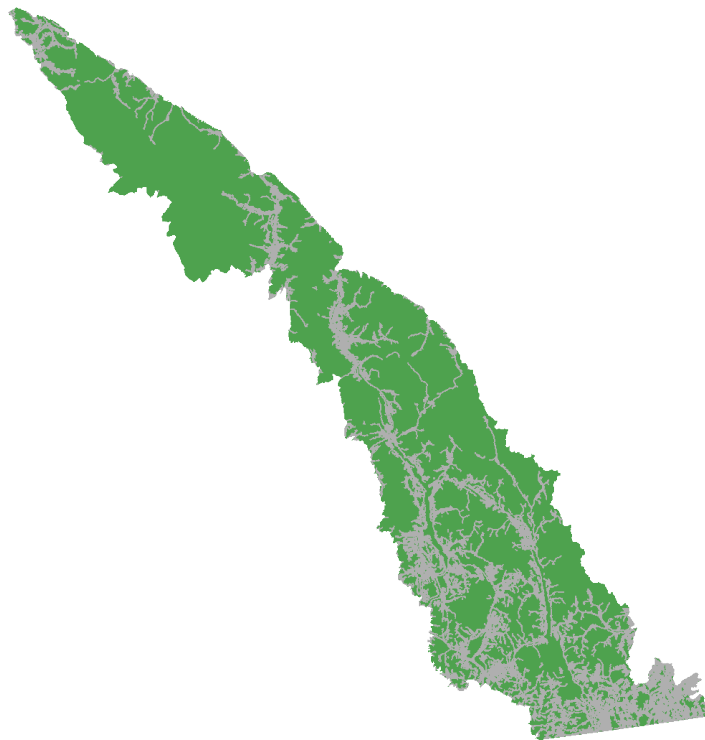
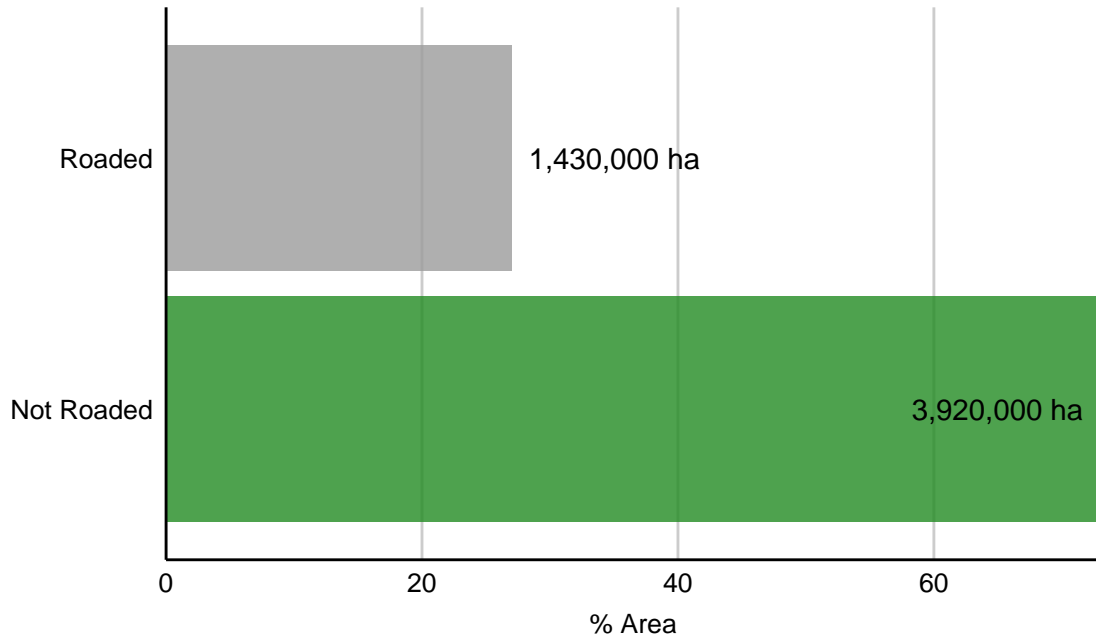
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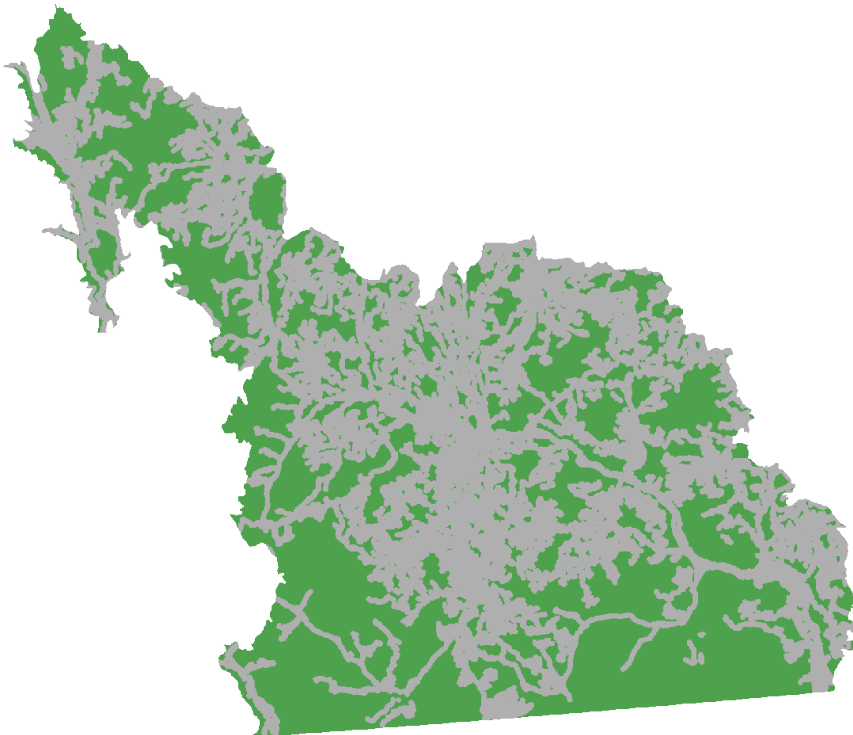
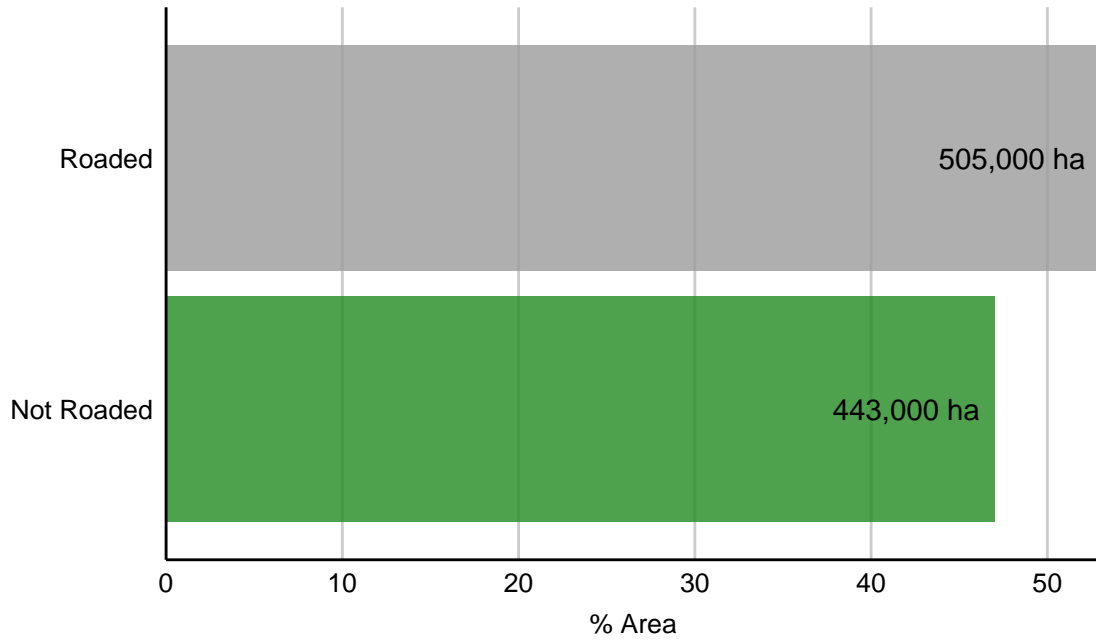
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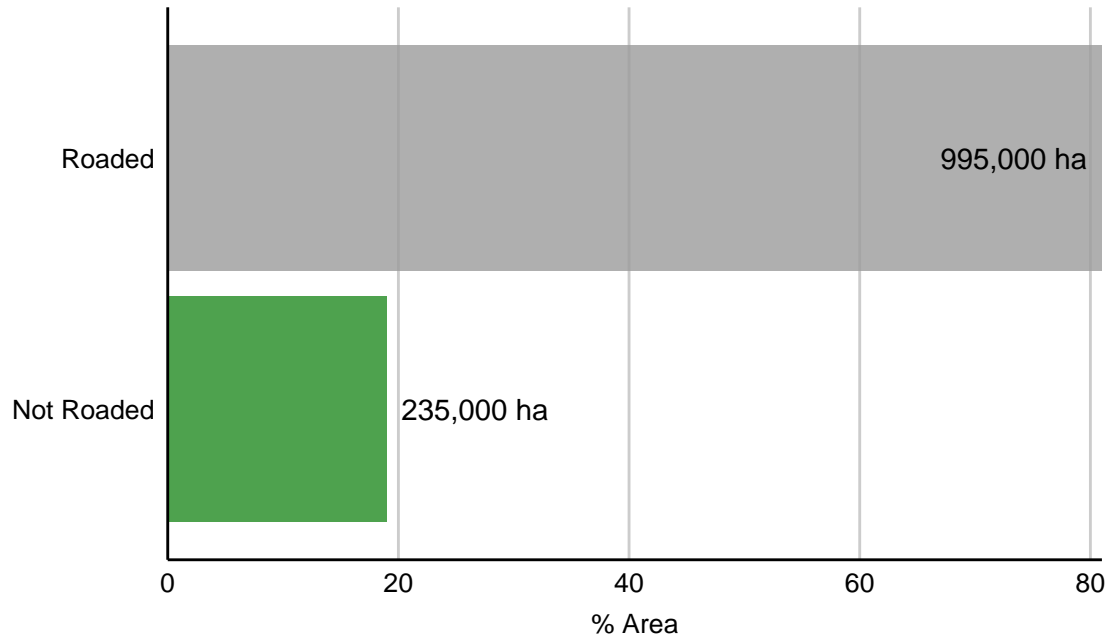
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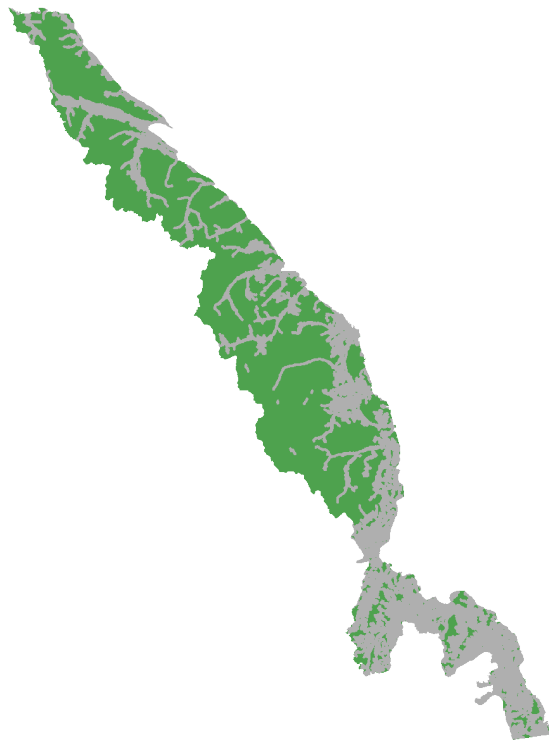
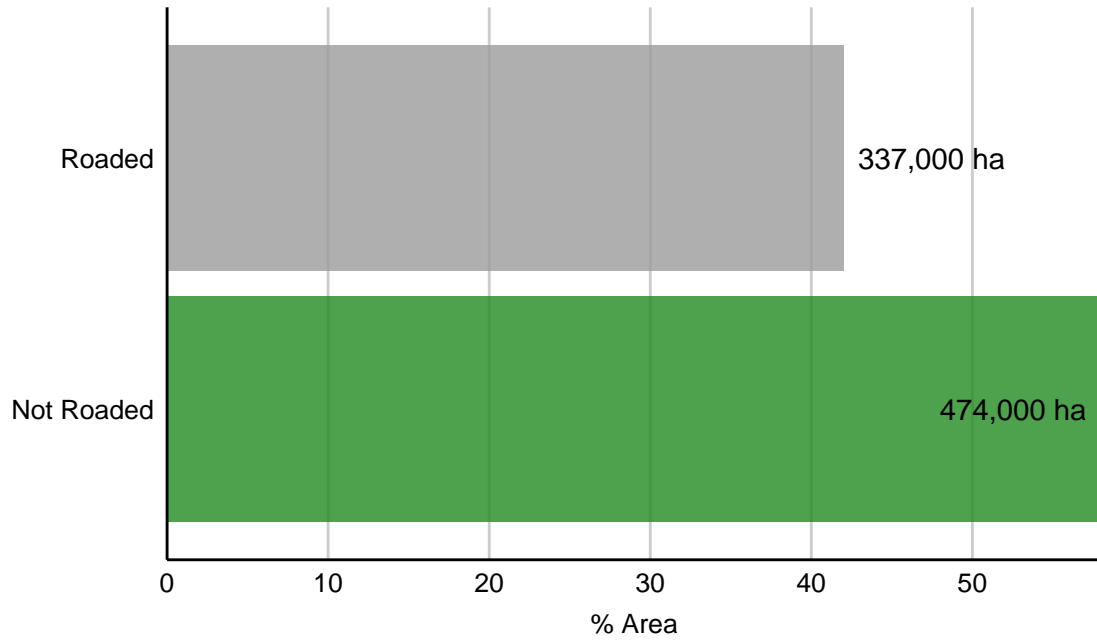
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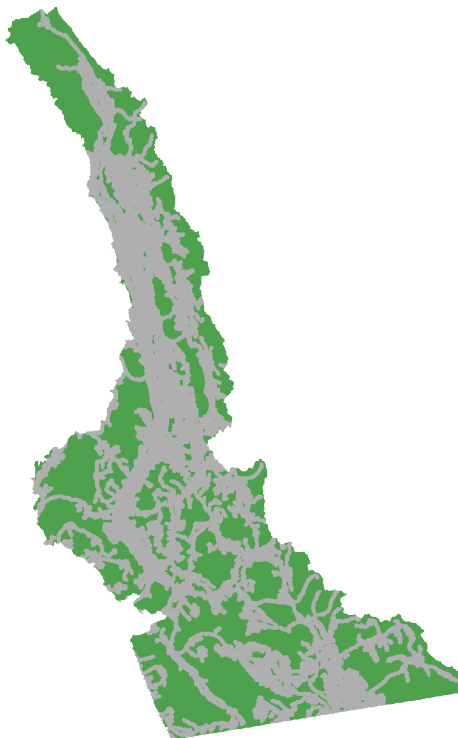
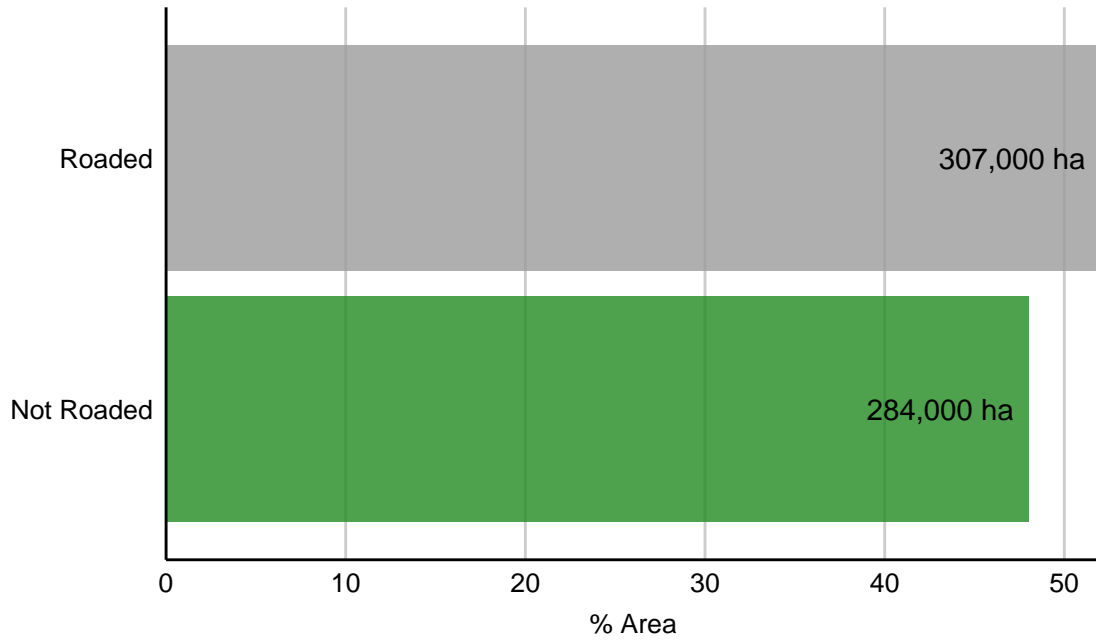
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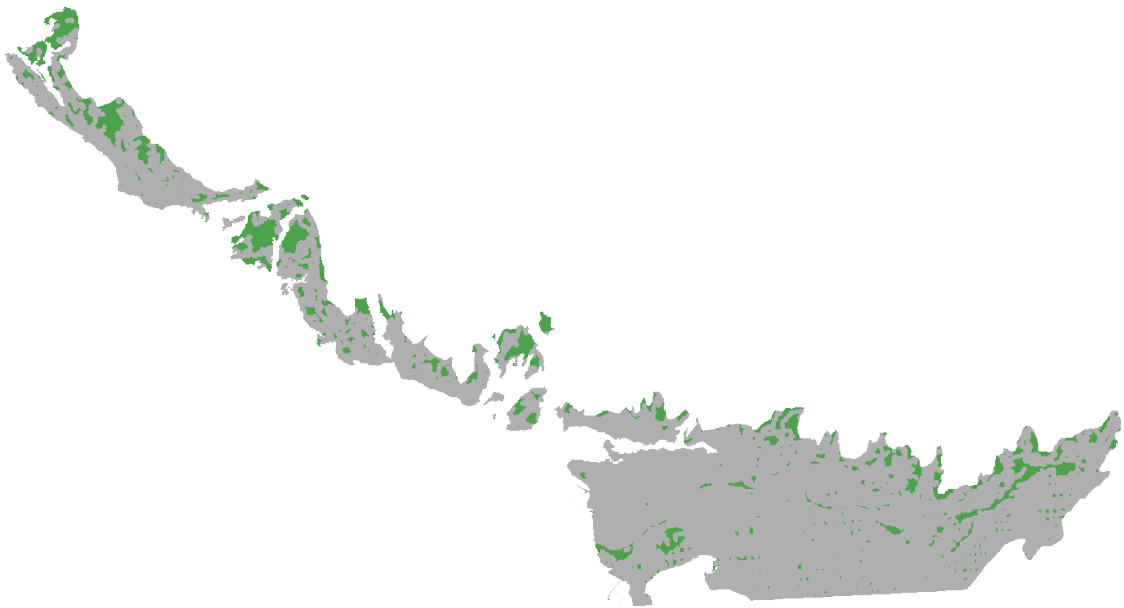
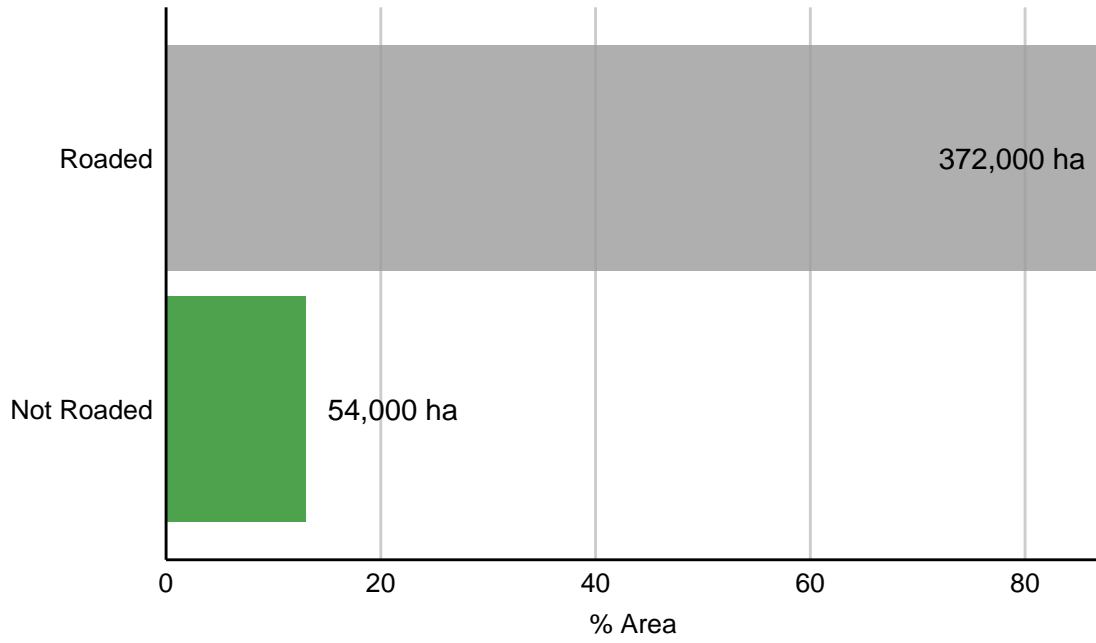
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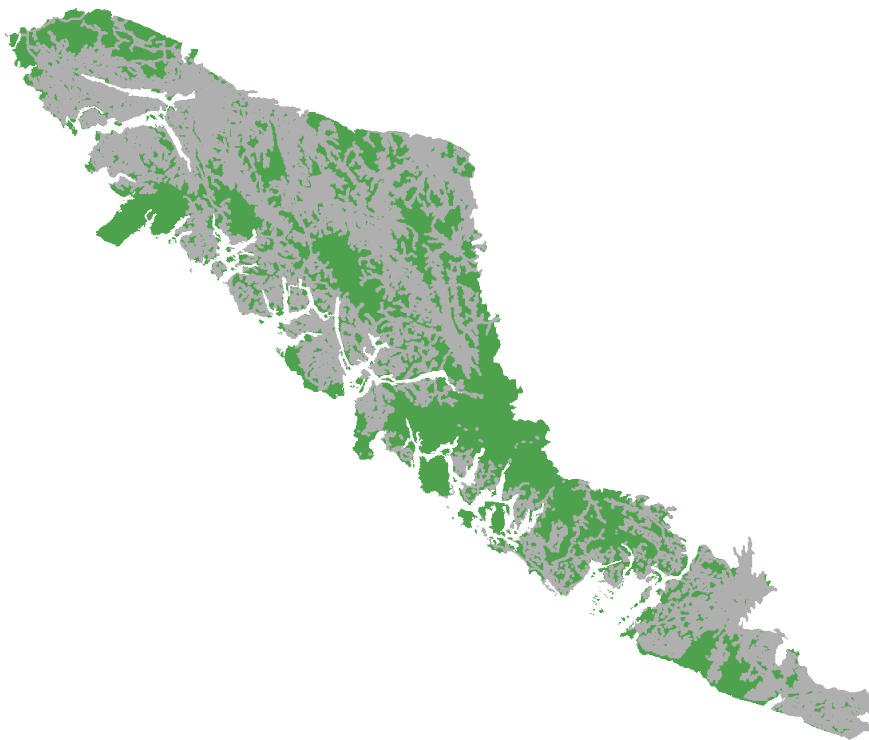
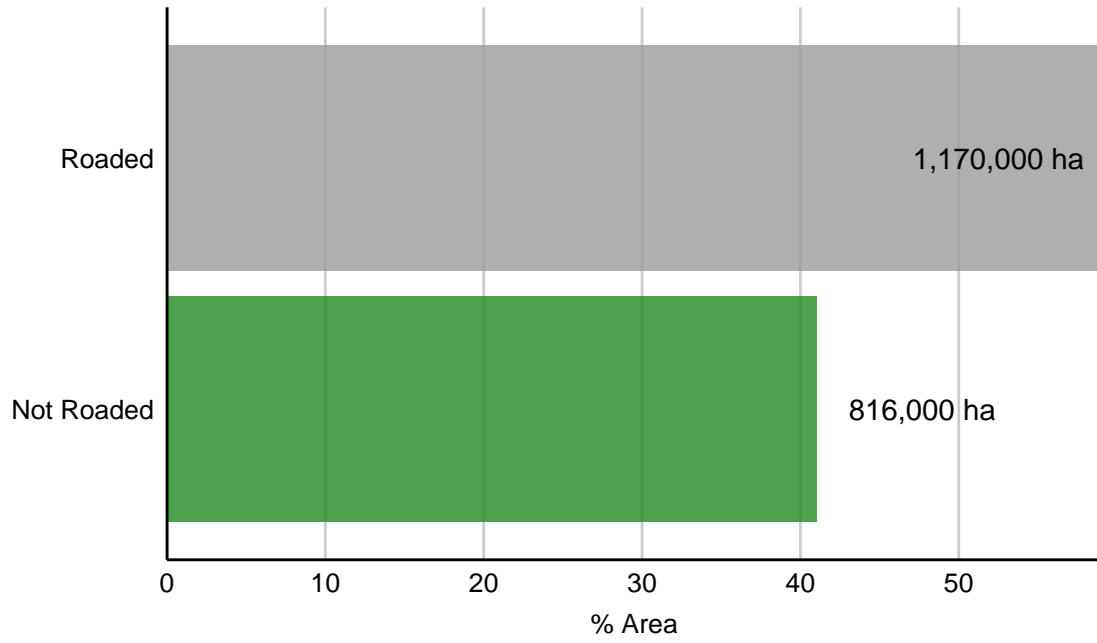
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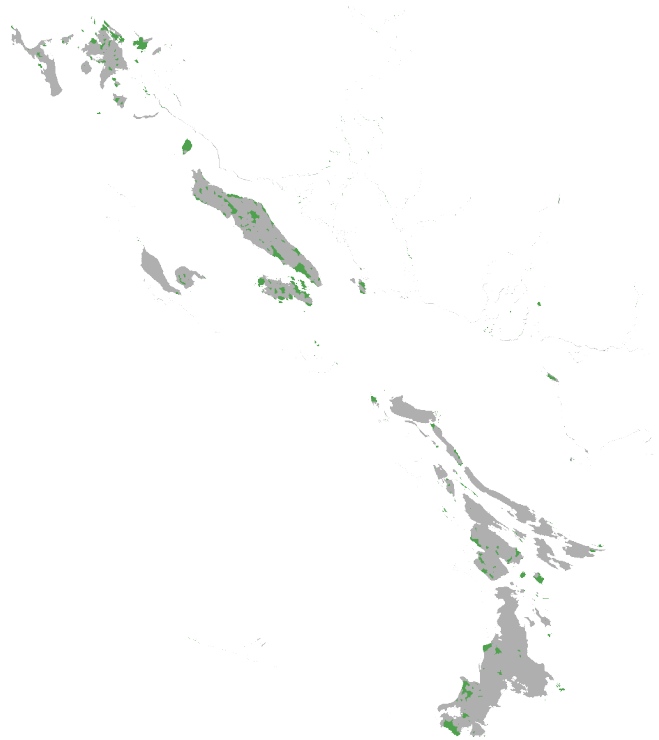
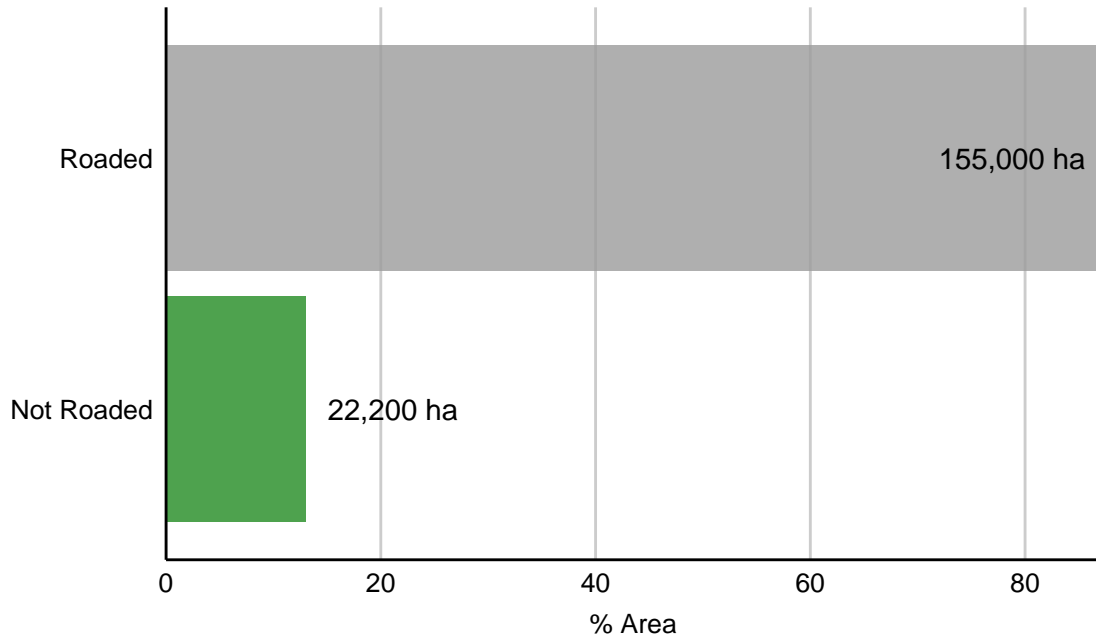
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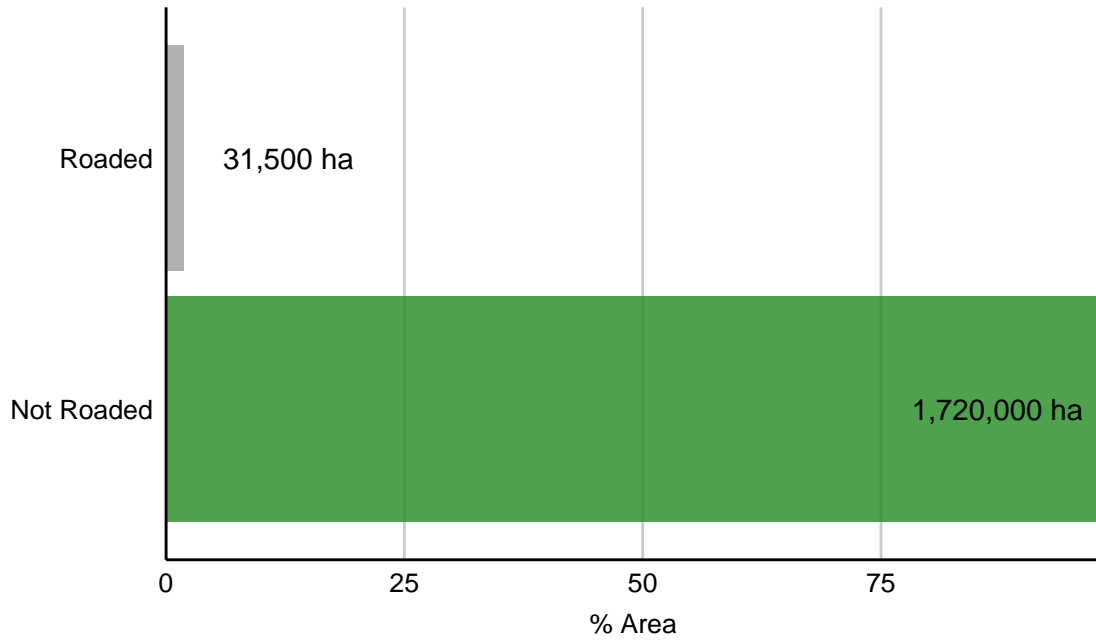
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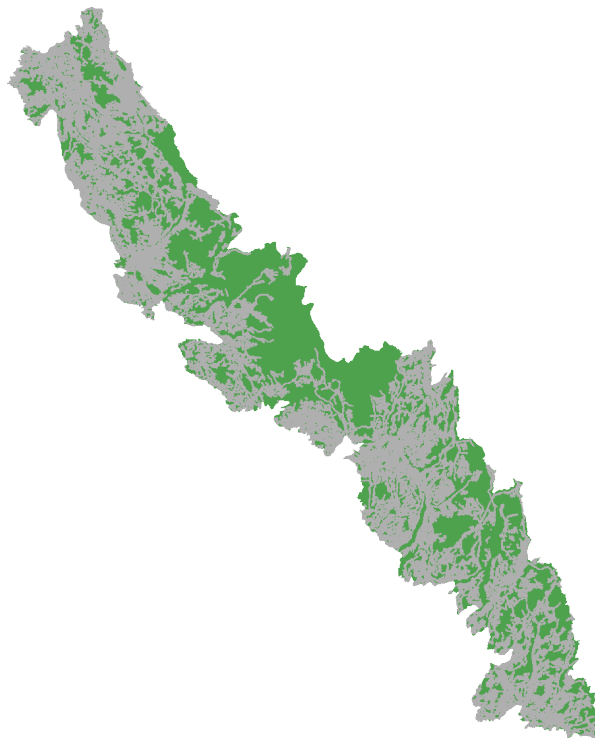
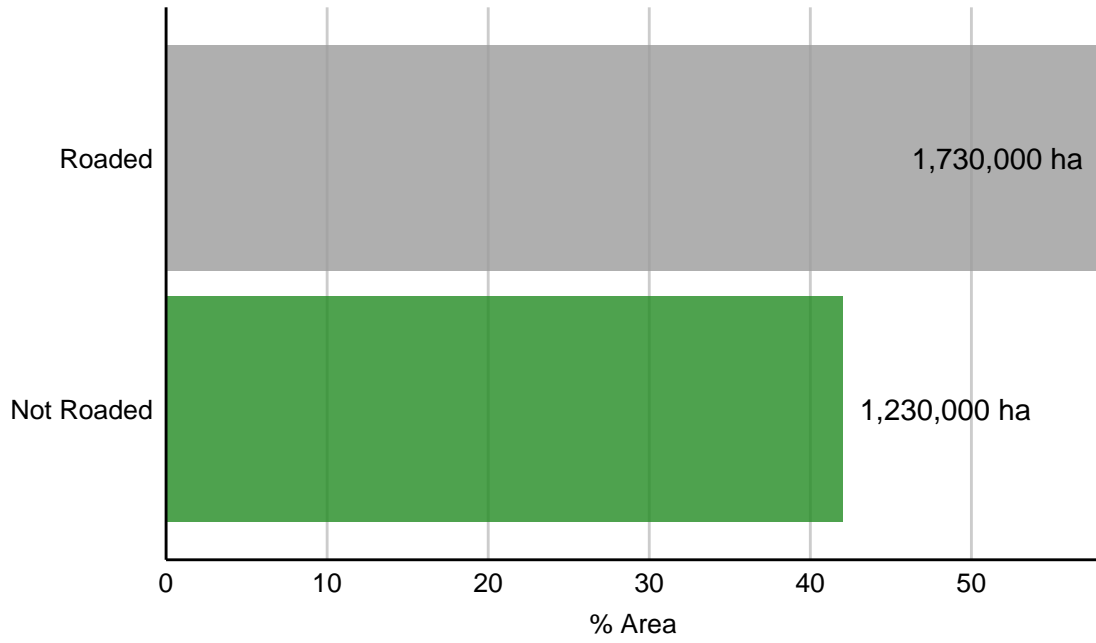
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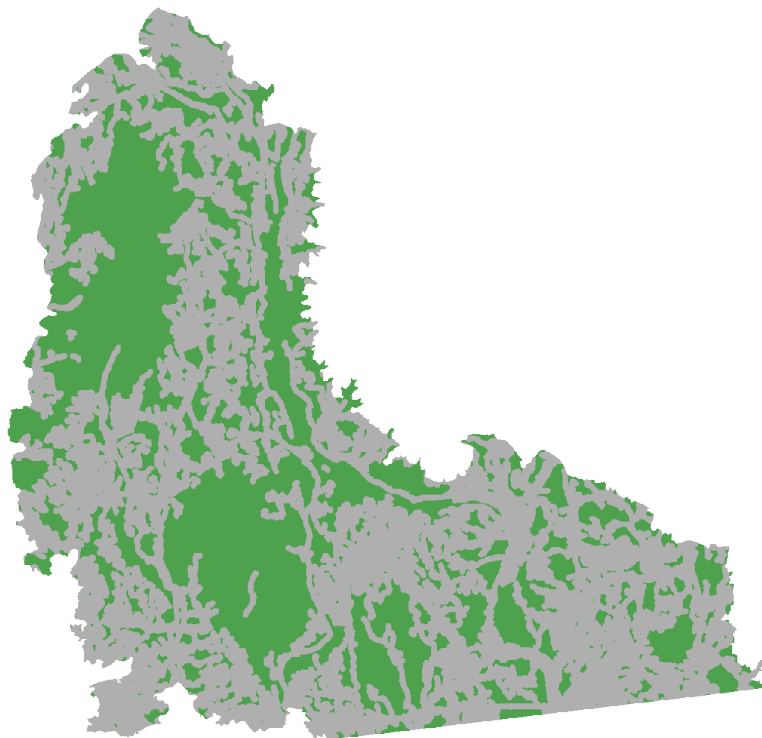
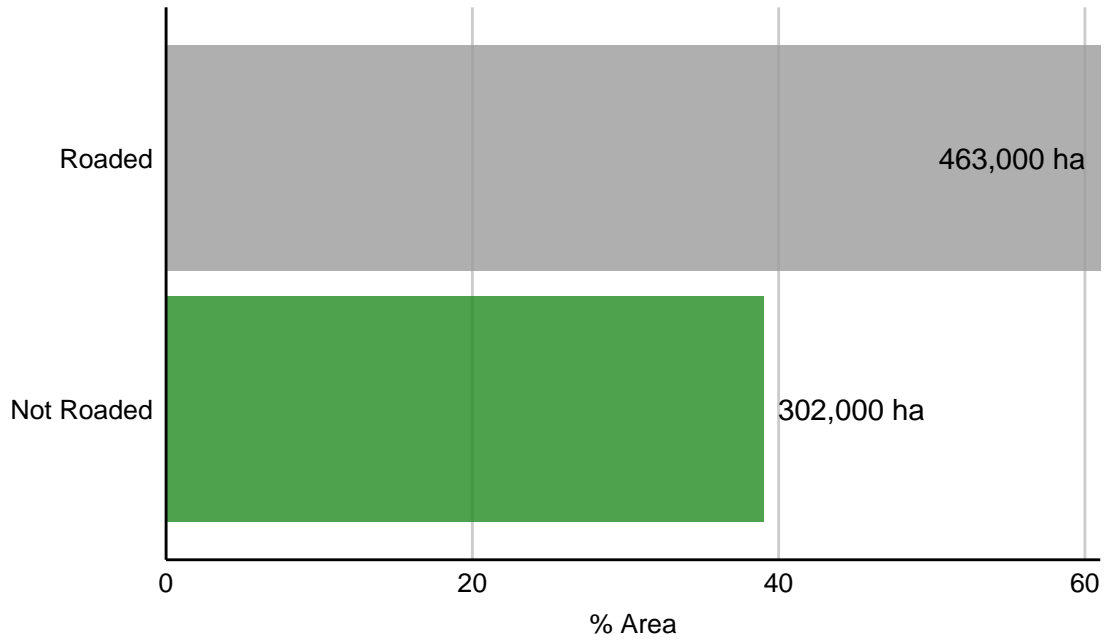
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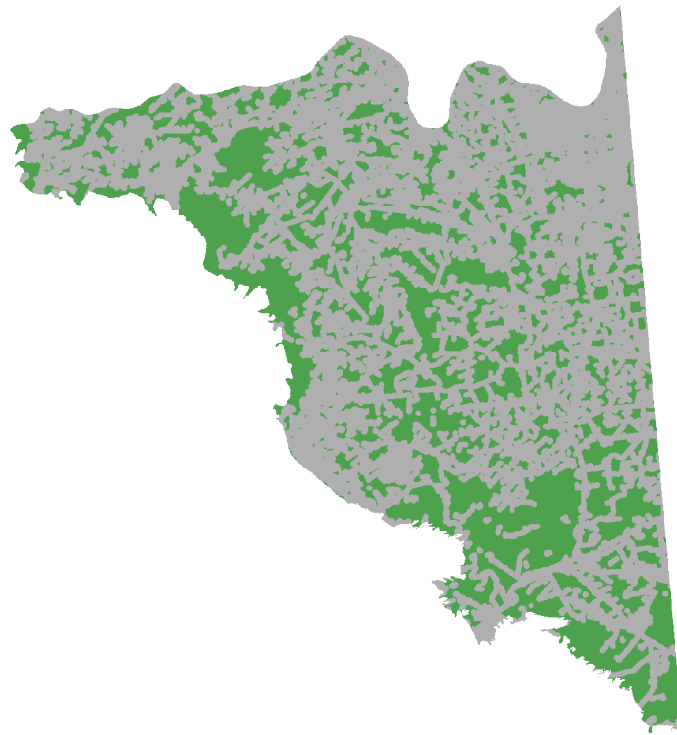
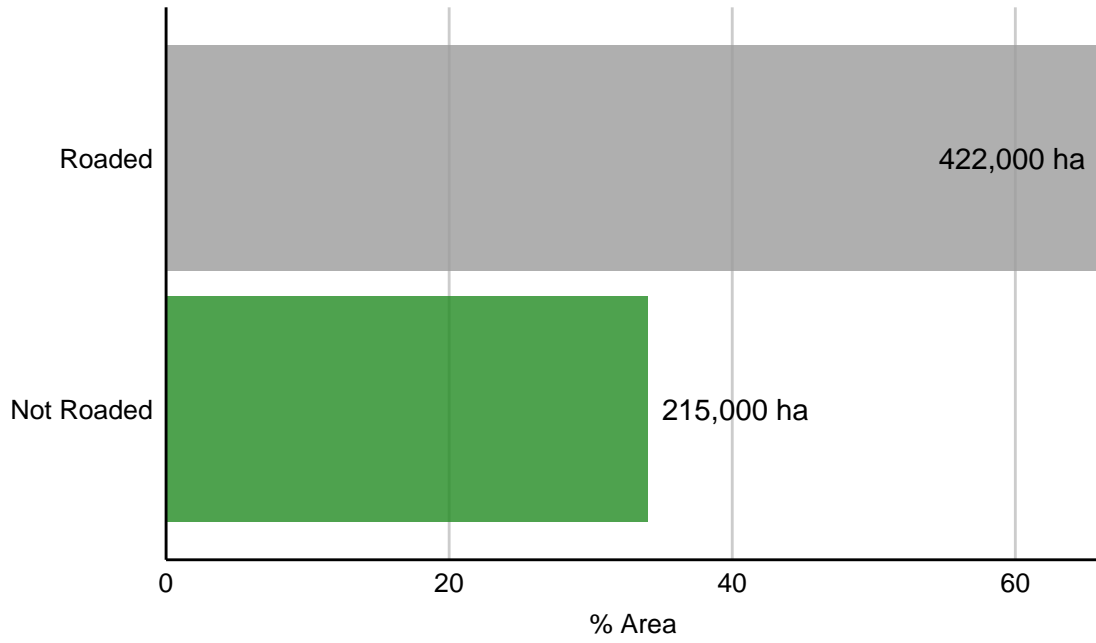
COLUMBIA HIGHLANDS



SELKIRK-BITTERROOT FOOTHILLS



SOUTHERN ALBERTA UPLAND



EASTERN CONTINENTAL RANGES

