

# The Garibaldi at Squamish: A Terrain Suitability Analysis

An exploration of terrain and environmental-based concerns using GIS

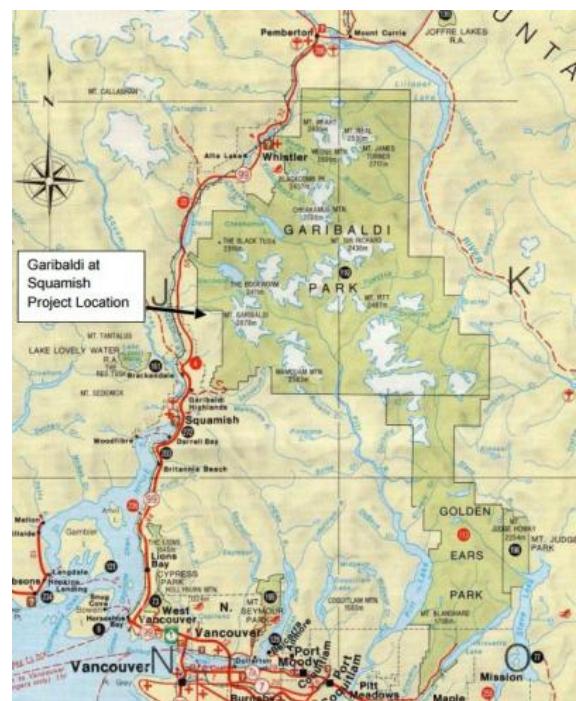
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## An Overview

The Garibaldi at Squamish project is a proposed year-round destination resort located on Brohm Ridge, about 15 km north of Squamish and halfway between Vancouver and Whistler. The plan includes 124 ski trails, 21 lifts, resort accommodation, and commercial development — with an estimated 900 construction jobs and 2,500 operational jobs.

However, the proposal has raised concerns from environmental agencies



and nearby communities. In particular, the Resort Municipality of Whistler opposes the plan, citing climate concerns and habitat disruption. One 1974 report even warned that the lower elevations (< 550m) of the proposed ski area may not reliably hold snow.

Image 2: Location of The Garibaldi at Squamish within BC, Canada

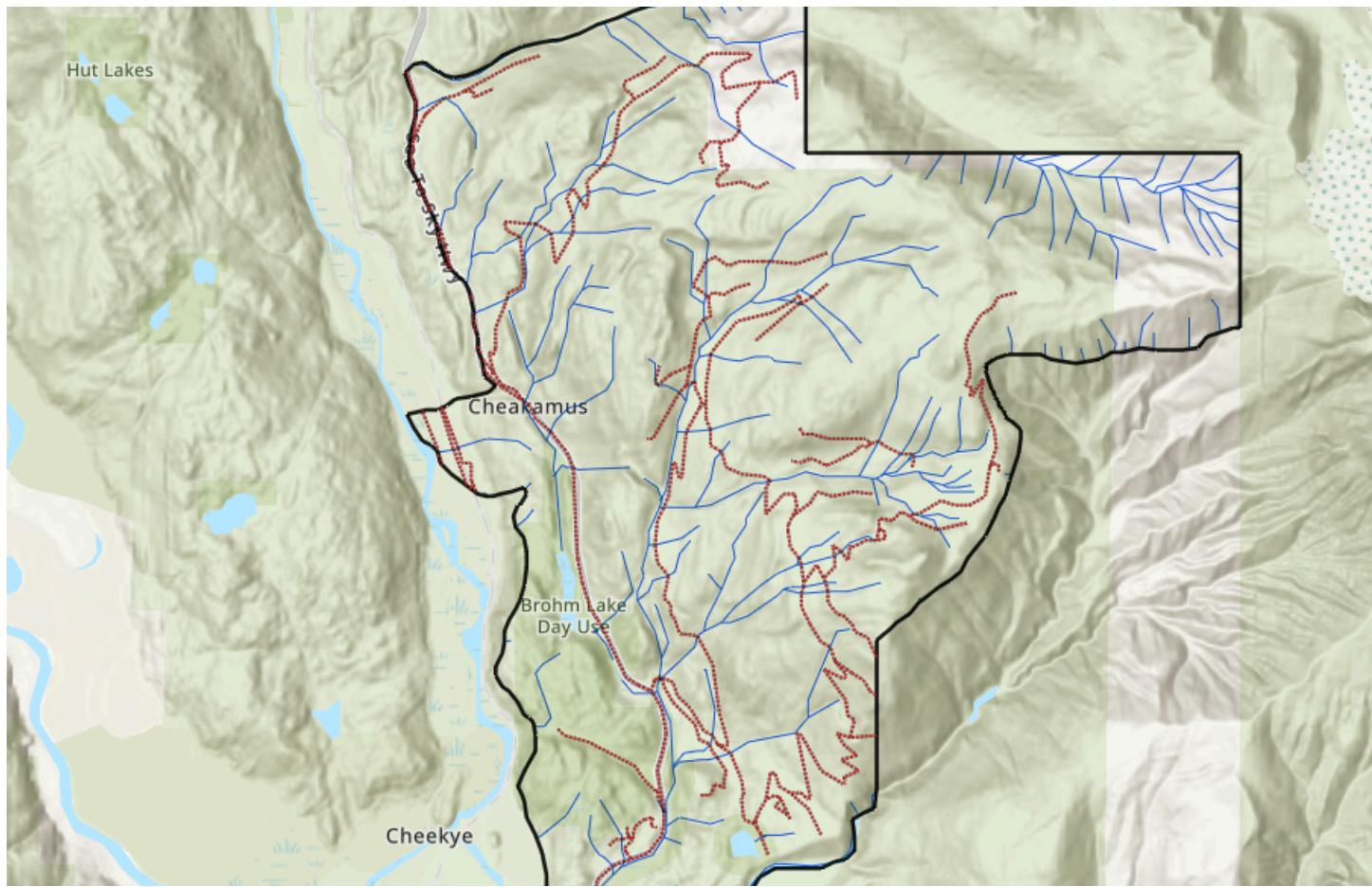
## **How can we explore the environmental and topographical factors that could impact the project?**

Our **main objectives** are to:

1. Assess how much of the resort area overlaps with sensitive ecosystems.
2. Assess whether the terrain supports viable ski conditions under current climate expectations and current land usage in the area.

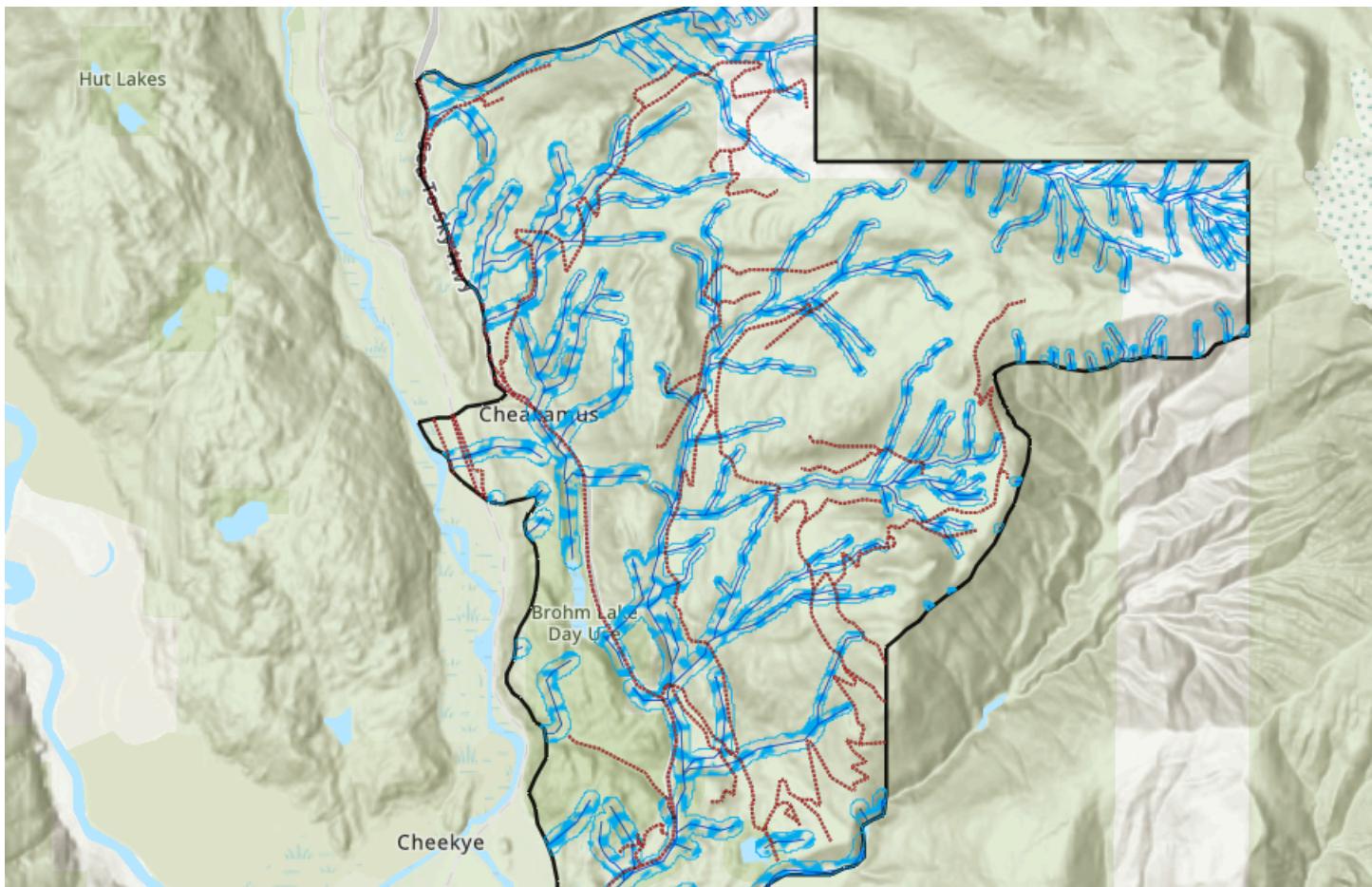
Using data from DataBC, HectaresBC and TRIM, we can account for critical areas within the project bounds such as species habitats, old growth forests. We can also spatially explore the amount of viable terrain by analyzing the elevation of the proposed ski resort. We will look at the project's exposure to snow-reliability risks and we will look at the current usage of the land.

**Lets spatially explore the ecologically sensitive areas within the project bounds.**



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**This is the project area.**

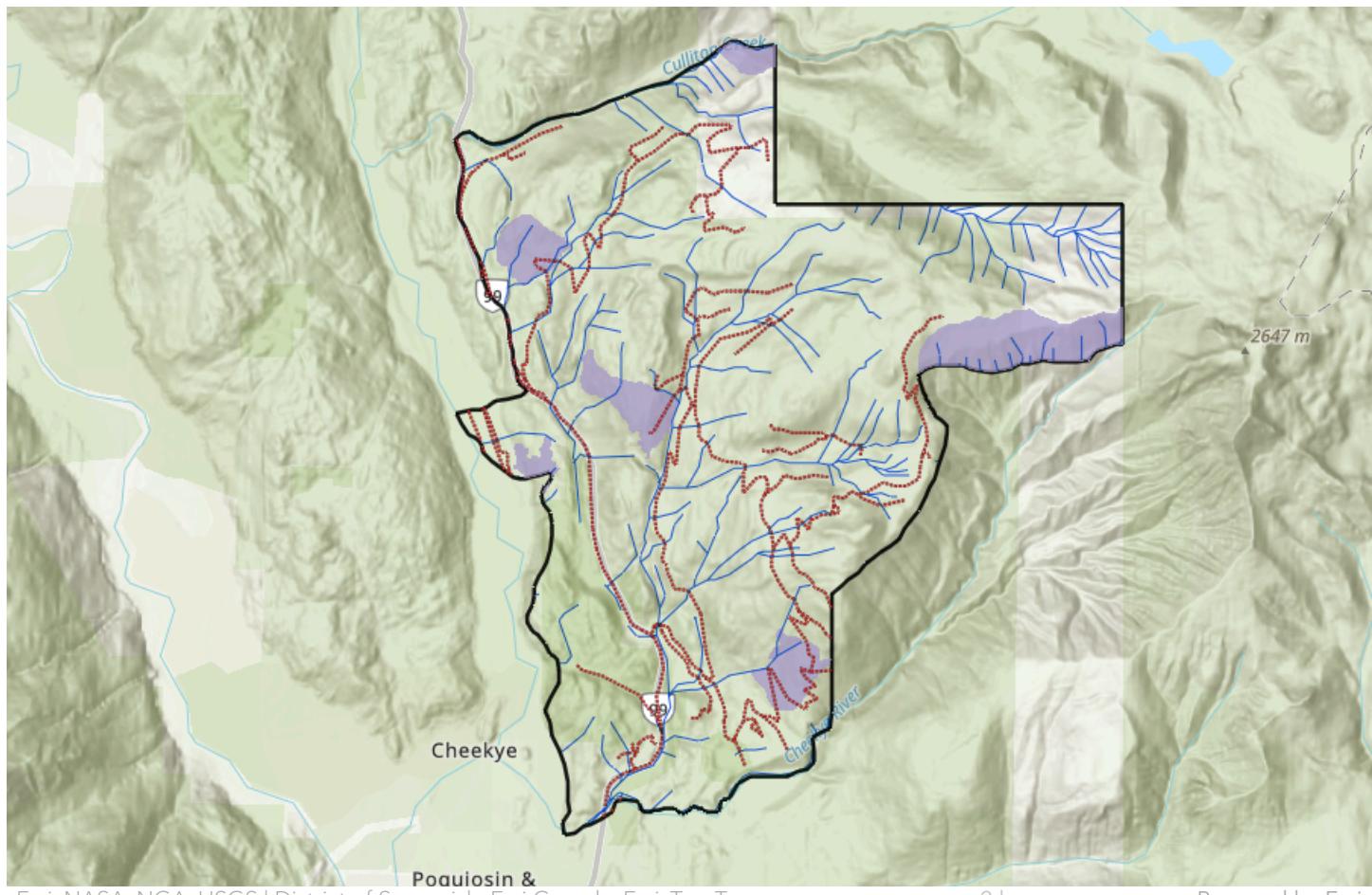


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2 km

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Our first step is to look at the area of the project that falls into **fish bearing stream or within fish/riparian habitats** outside of the streams. This covers about **28%** of the total project area.



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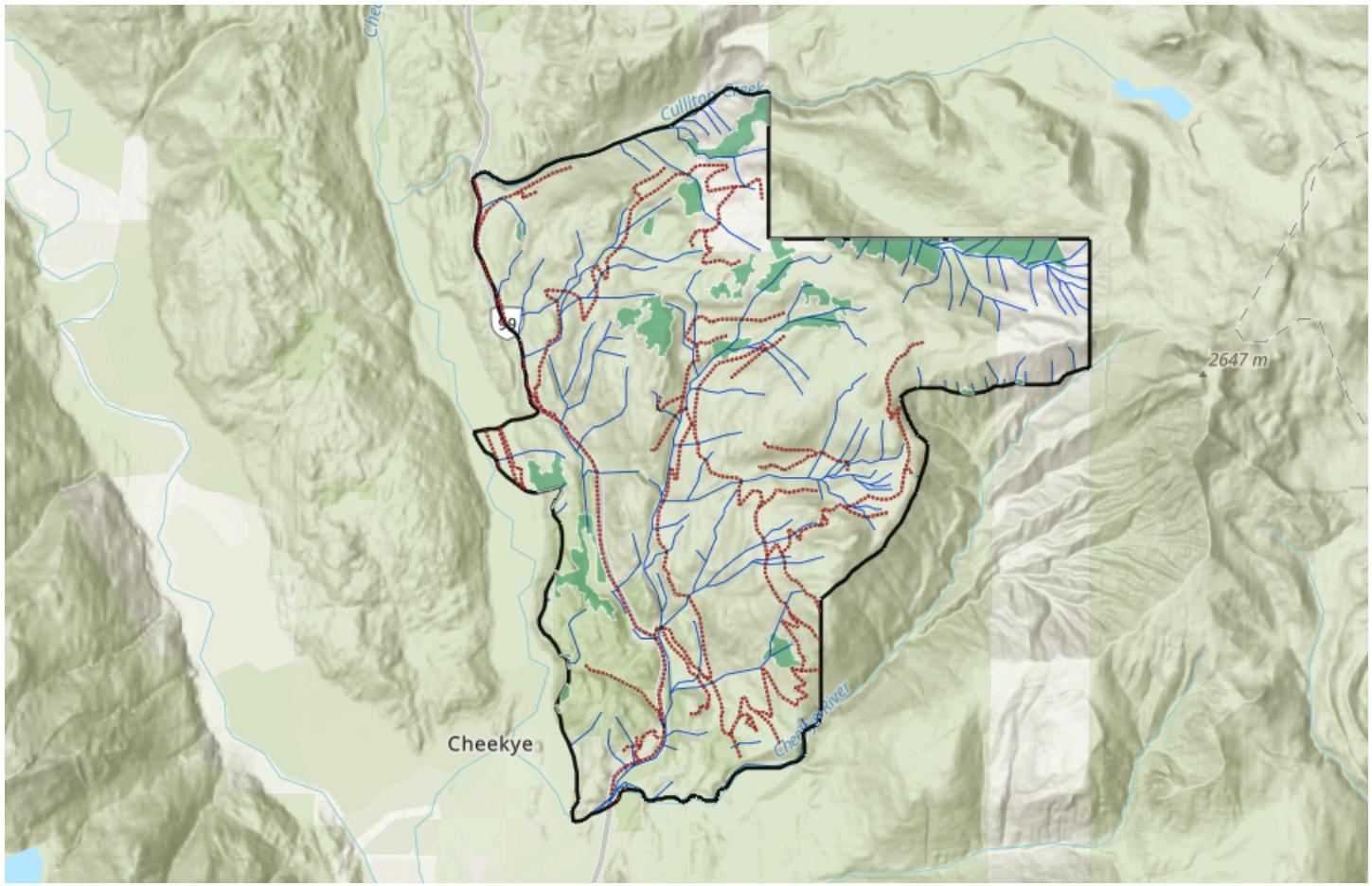
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Now, let's examine the areas within the project critical to the

survival of **Mule Deer and Mountain Goats** within the winter.

This accounts for about **8%** of the project area.

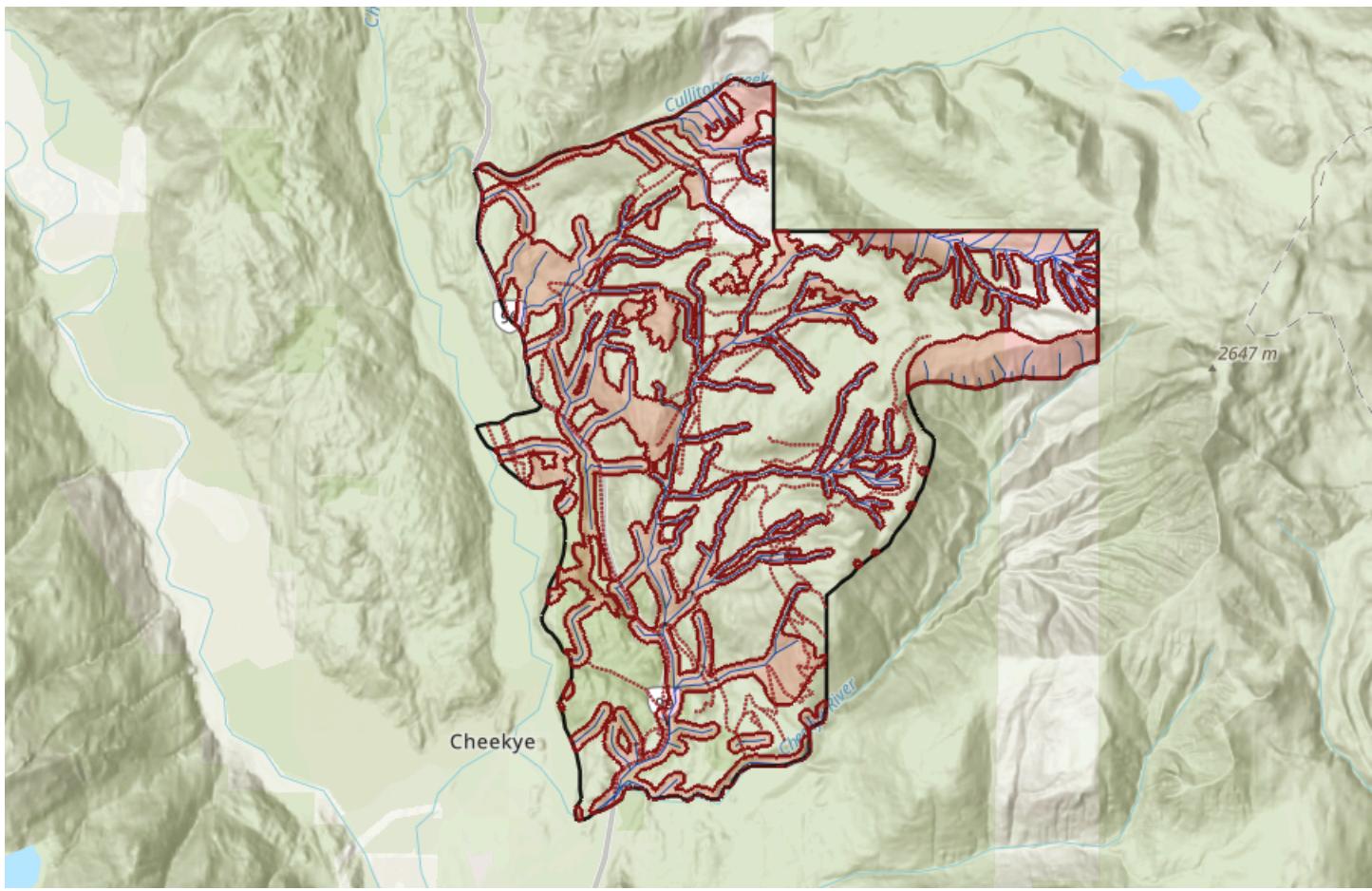


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Next, let's take a look at the areas with **old growth forests**. This makes up about **7%** of the total project area.



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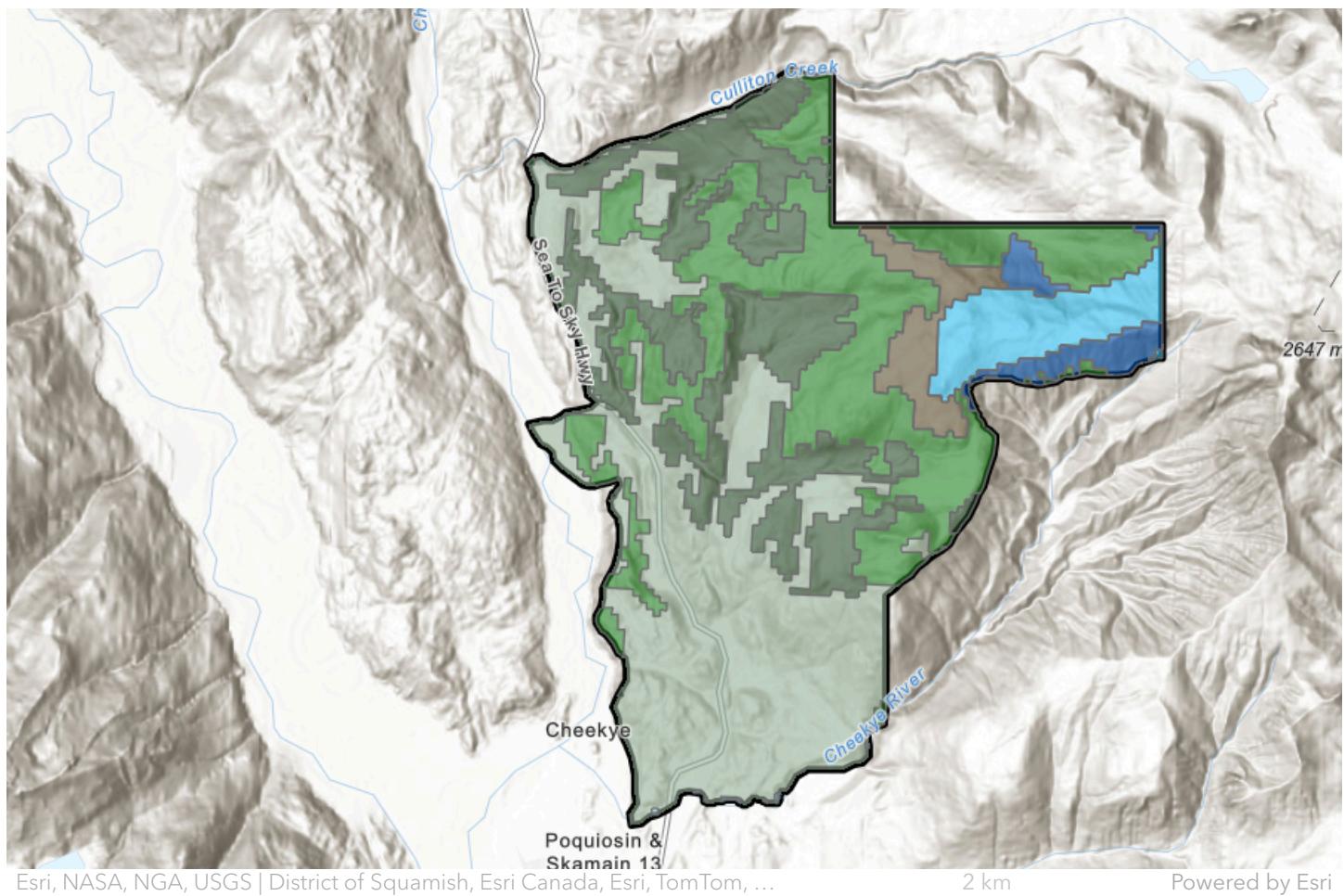
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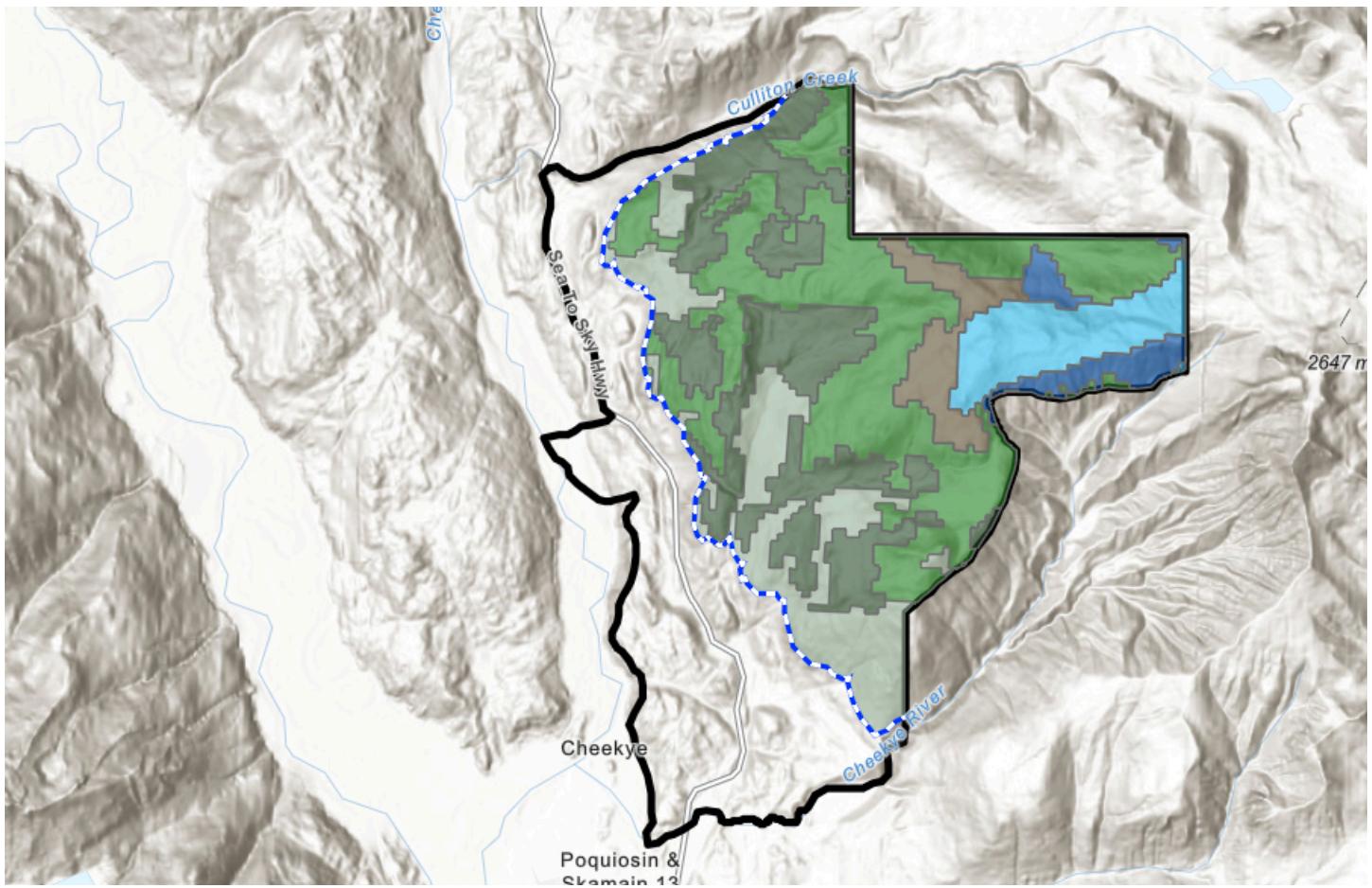
Altogether, we can determine that the ecologically sensitive area within the project bounds is a combination of these three variables.

**So, we can conclude that about 39% of the total proposed project area of The Garibaldi at Squamish is protected and considered a risk to the ecosystems that live there.**

**Is the terrain in this area even suitable for a ski resort, especially with current climate predictions?**



**This map shows how the land making up the project area is used.**



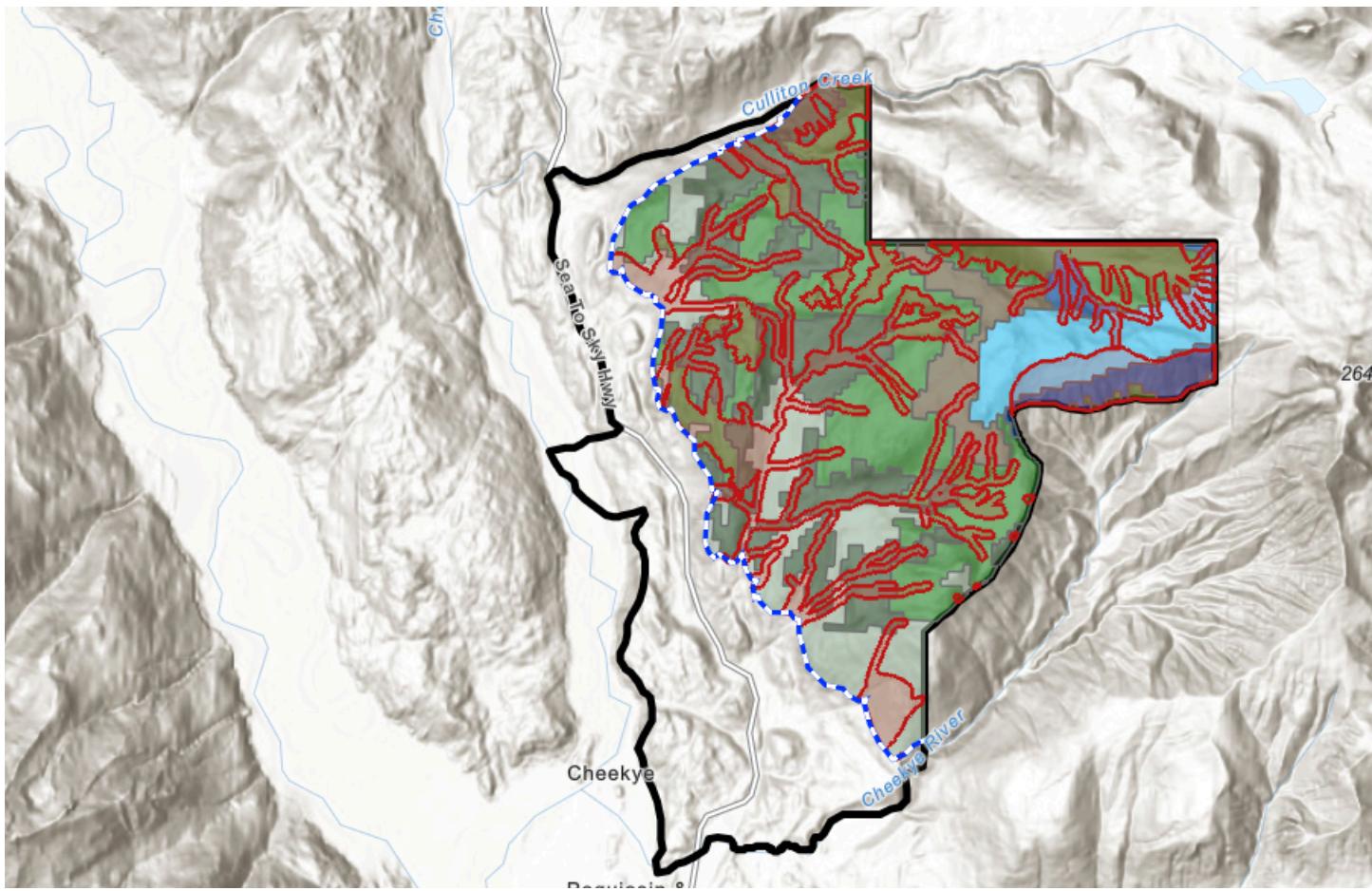
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2 km

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**According to climate predictions, in order for the terrain to be considered viable for long-term skiing, the elevation must be greater than 600m.**

**So, of the total project boundary, about 68% is actually suitable for skiing.**



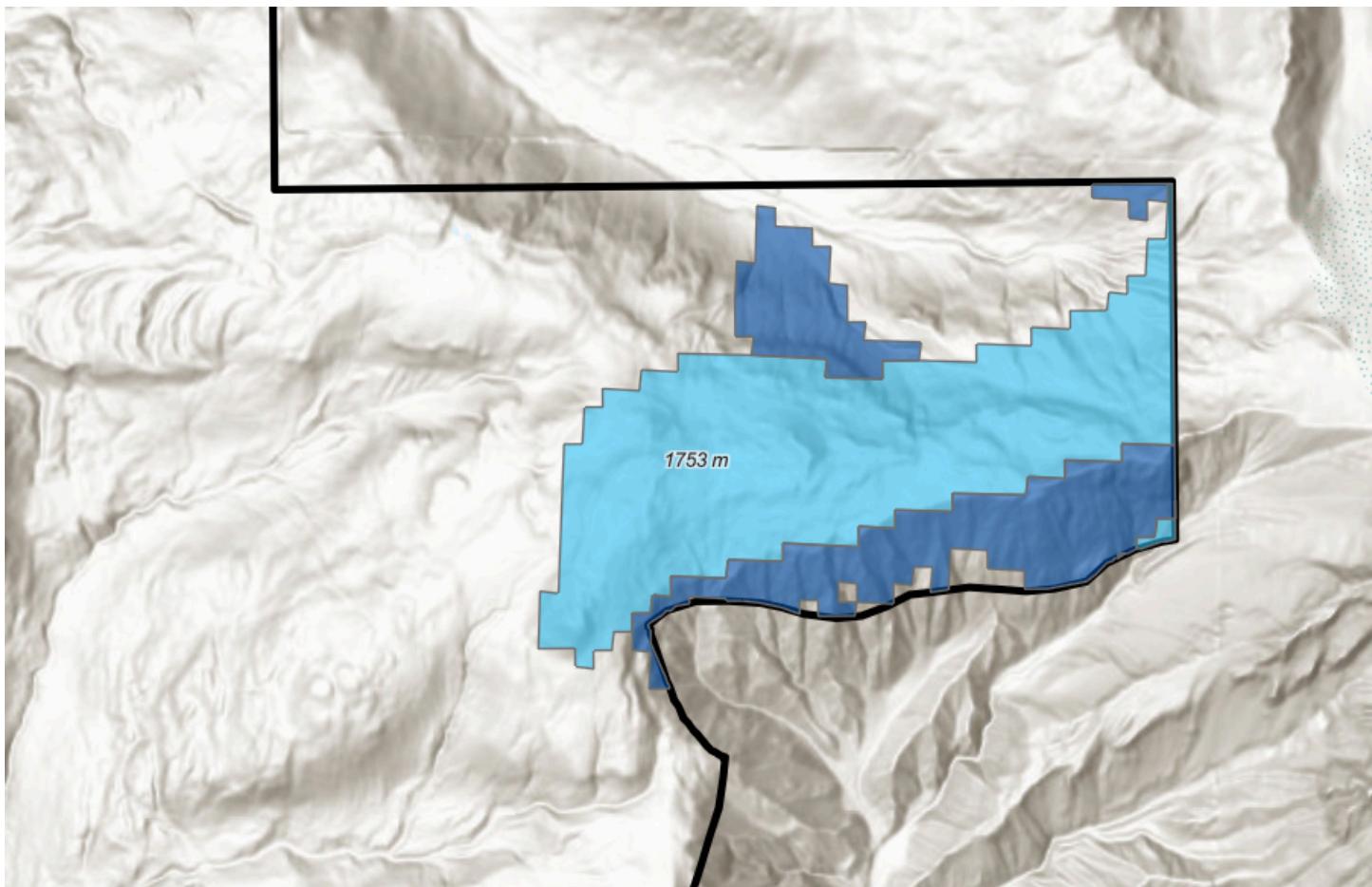
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2 km

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**And about 36% of the suitable terrain for skiing is a protected area.**

**This means that within the entire project boundary, only 32% of the total area is both suitable for skiing and does not impact ecologically sensitive areas.**



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1 km

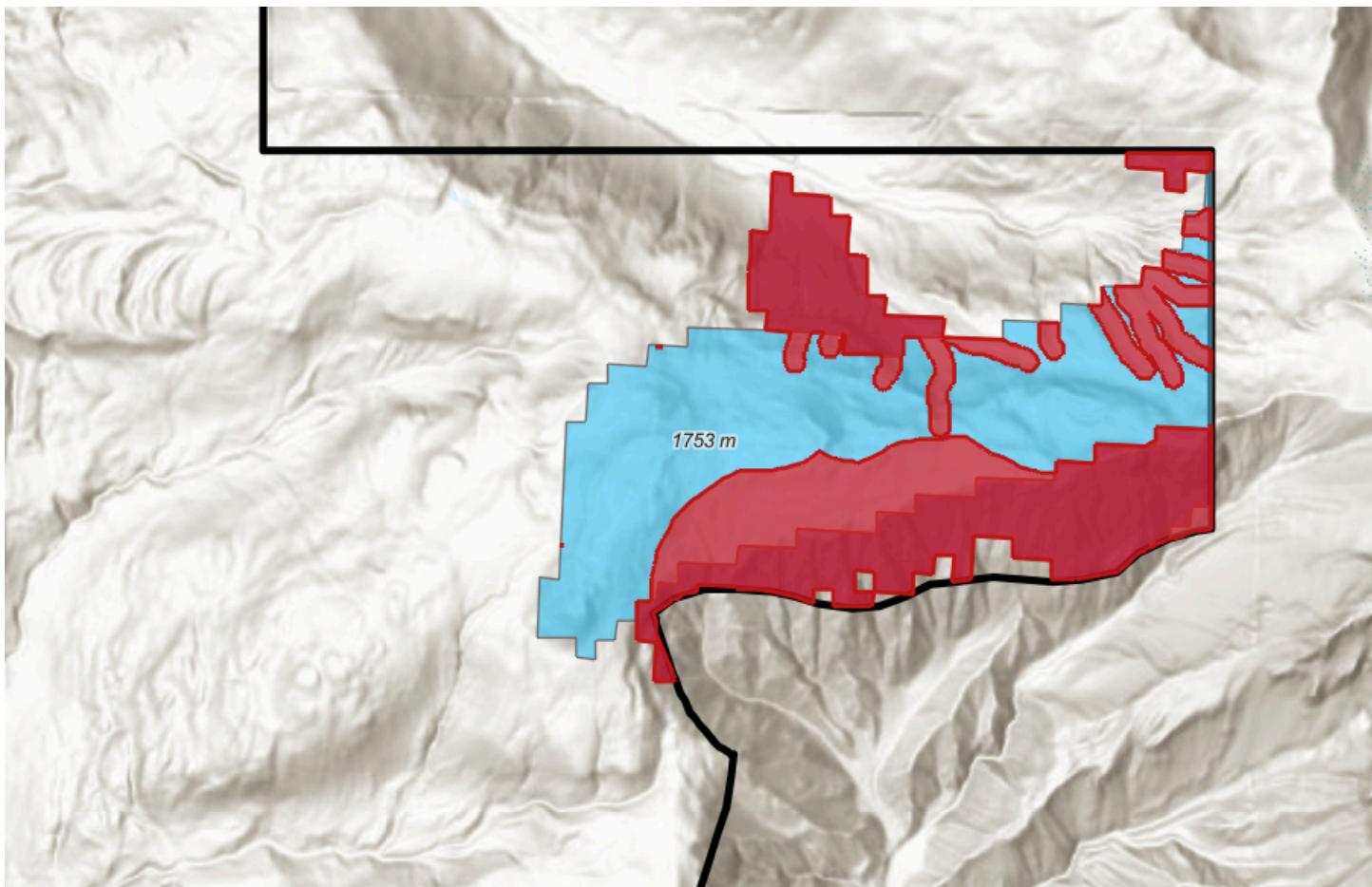
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**But what about the expert terrain up in the alpine and sub-alpine? It is BC after all...**

**For starters, this terrain only makes up around 9% of the total project area.**

**This pales in comparison to Whistler Blackcomb (just a 40 minute drive north), which has 16 alpine bowls and 3 glaciers. Not to mention, 45% of the area across their two mountains is considered very difficult or expert terrain<sub>1</sub>.**

**But, wait a minute, it can't be safe to ski in sub-alpine avalanche chutes! And what about the ecologically sensitive areas?**



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1,000 m

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**What if we combine our previously determined ecologically sensitive areas with those sub-alpine avalanche chutes?**

**We found that of the project's alpine and sub-alpine terrain, 53% is either prone to avalanche chutes and/or is considered an ecologically protected area.**

**We can conclude that only 47% of that expert alpine terrain that is both:**

- **Safe for the environment**
- **Safe for skiers**

## **Putting it all together**

Our analysis shows that nearly **39% of the proposed resort area** overlaps with ecologically sensitive zones, including riparian areas, winter habitat, and old growth forests. From a skiing

perspective, only **68%** of the area is high enough for reliable snow, and just **32%** is both skiable *and* outside protected zones.

Expert terrain is limited - only **9% of the area**, and over half of that is either environmentally sensitive or avalanche-prone.

While the project offers economic opportunities, the trade-offs are significant. The available and sustainable ski terrain is far more limited than the proposal suggests.

## Next Steps

Further work should focus on economic projections and comparing anticipated growth with the challenges posed by climate change. How will warming temperatures impact the resort's long-term viability? Additional studies on future snowpack, climate impacts, and environmental carrying capacity are needed to assess whether the proposed development can maintain profitability as conditions evolve.

Ongoing consultation with local communities, Indigenous groups, and environmental experts will also be key in shaping sustainable development strategies.

## Data Sources

DataBC, TRIM, HectaresBC

**Image 1** <https://squamishadventure.com/an-adventurers-guide-to-garibaldi-provincial-park/>

**Image 2** <https://www.cbc.ca/news/canada/british-columbia/garibaldi-at-squamish-ski-resort-will-tame-pristine-area-says-developer-1.3082038>

1 <https://www.whistlerblackcomb.com/the-mountain/about-the-mountain/mountain-info.aspx>