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UBC GEOB 270

Client Memo for Development Project Proposal
Environmental Assessment: Garibaldi Ski Resort, Squamish

The proposed project is for the construction and operation of a ski resort at Garibaldi Park in Squamish. As a natural resource planner, I conducted an environmental assessment on the area of the proposed project to find out whether the project would be economically viable, as well as the extent of which would negatively impact the natural ecosystems within the project boundary area.

To test for economic viability, the elevation at which annual snow cover can accommodate a ski resort was the variable used to represent its economic viability: this value also takes into account the effect of global climate change regarding annual potential snow precipitation. That is, areas below 600 meters will not receive enough snow to accommodate a ski resort, making the project economically unviable, and areas at or above 600 meters will receive enough snow to support a ski resort, making it economically viable. Using a digital elevation matrix, we can find the areas of the project boundary that lie above and below a vertical of 600 meters. As shown on the map, "Proposed Garibaldi Ski Resort; Environmental Assessment," 69% of proposed project boundary will be constructed at elevations greater than or equal to 600 meters. This supports that the operation of a ski resort at Garibaldi would be economically viable for potential workers and customers.

To ensure the long term, sustainable operation of the ski resort, we need to analyze this project's environmental risk through survey data input for a list of all ecosystem species within the project boundary, and terrestrial ecosystem mapping (TEM) to locate protected areas that contain old growth forests, ungulates, and red-listed species. Generally, 6.8% of old growth forests, 7.9% of ungulate habitats, 25.3% of red-listed ecosystems, and 0.16% of fish bearing streams and/or surrounding riparian areas will be directly impacted by just project construction. Approximately 48.5% of the total project area intersects with protected areas containing the above species. Considering the complications of collecting such data, a near half percentage of environmental risk would be problematic for this project. As well, this percentage does not include the environmental impact that the project might have on ecosystems surrounding the project area: i.e. this percentage underestimates macroscale environmental damage.

Given that our prime goal is to run an economically sustainable and profitable institution, interfering with the habitats within and surrounding the proposed project area will yield unpredictable consequences in the long term, and thereby create a possibility for financial losses. For me, two of the greatest environmental concerns to project development involve its relation to the economic sustainability of the project itself, and the unpredictability of reconstructing complex, interconnected ecosystems. First, we run the risk of eventually depleting both natural and economic resources in the long term operation of the ski resort, making a short term sacrifice of natural resources from construction improvident: in this case overall profit loss and increasing global temperatures from clearing old growth forest areas that aid in reflecting excessive solar radiation. Second is the unpredictability of regional to global scale environmental impacts that could stem from the local environmental damage caused by the project. For example, driving away the ungulate species from their naturally preferred habitat may give rise to species harmful to the original ecosystem previously habituated by ungulates.

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To proceed with this proposal, I would advise that you integrate the construction of the ski resort into the original ecosystem as opposed to reconstructing the area. This would help to minimize the local environmental damage as well as the macroscale environmental risk that this could invoke. This could be done by constructing the area as a ‘reserve’ styled ski resort that provides a small barrier between resort patrons and risk species. Integrating the construction of the ski resort with the original ecosystem would mean following the shape of the landscape and creating structures that would not interfere with species habitats and routes, and avoid clearing the area of old growth forests.