

Together for Wildlife

Together for Wildlife HCTF Conservation Fellowship Recipient 2023



Tyler Jessen

Tyler Jessen is a PhD student at the university of Victoria. His thesis aims to advance knowledge on the causes and consequences of climate change on the BC coast, while also providing data that are critical to the successful management of coastal mountain goats, grizzly bears, and black bears.

The Great Bear Rainforest of Coastal British Columbia represents one of the most ecologically and culturally significant regions of Canada. However, effective conservation and management of coastal species is limited by available scientific data, especially for low-density, highly mobile, species that are difficult to observe, like mountain goats, grizzly and black bears.

Mountain goats represent an ideal species to study the effects of climate-induced mismatch and range shifts owing to their (altitudinal) migratory nature and the rapid, significant changes in alpine systems associated with climate change. Evidence suggests that mountain goats are likely to be adversely affected by general trends in climate change over the next decades, both directly and indirectly. The ultimate consequences of climate change, whether direct or indirect, are likely to include overall reductions in fitness and mortality.

Bears may also be affected by climate change, as many vital rates of bear populations (e.g., reproduction, survival) depend on seasonally available food such as sedges, berries, and salmon. Consumers that depend upon seasonally available food sources may be especially vulnerable to climate-induced mismatch. Many bear populations are considered to have low resilience as a result of low fecundity and density, but also because of a need for high quality forage). Utilizing a combination of methods, including aerial surveys and non-invasive hair snags, Tyler is using occupancy models to determine how these species are likely to respond to changes in the distribution and timing of various landscape features, such as food availability.

The results of this research not only provide insight into how these species might respond to future environmental change but are also already being used to inform Indigenous-led management actions. Additionally this research will also advance theory of the consequences of changes in the spatiotemporal distribution of species associated with climate change. In doing so, this project is well-aligned with the goals of the Together for Wildlife goals, especially the fifth and final goal aimed at fostering collaboration with Indigenous governments.



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