

Rory Fogarty

Title: Forestry, fire, and fur: Understanding the factors behind the decline of a fisher (*Pekania pennanti*) population in central British Columbia

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Understanding the factors influencing the distribution and abundance of endangered carnivores is crucial for prioritizing and implementing conservation strategies. For many low-density and wide-ranging carnivore species, anthropogenic effects such as habitat degradation and fragmentation can be major drivers determining their persistence on a landscape. The fisher (*Pekania pennanti*) is a highly elusive, forest-dependent member of the weasel family and despite once being widespread across North America, west of the Rocky Mountains, they now exist as small, isolated populations over a fraction of their historical range. In the central interior of British Columbia, the fisher population is geographically and genetically separated from other North American fishers and their numbers appear to be declining rapidly. The rigorous monitoring of fishers over large areas is challenging due to their secretive nature, therefore it is unclear what the true extent of these declines may be, and little is known about the factors affecting their current distribution in several regions of BC's interior. To help address these key knowledge gaps, I am conducting a DNA-based hair-snagging survey in the Interior Douglas-fir (IDF) biogeoclimatic (BEC) zone to generate a density estimate for an area where no demographic data currently exists. I will be developing a habitat-based model to predict where fishers can be expected in the IDF and target key areas needing increased protections. Finally, I will be performing a Population Viability Analysis to determine their probability of persistence under current fisher harvest regulations.