

The Cascades Carnivore Connectivity Project: Assessing Landscape Connectivity and Detecting Rare Species in Washington's North Cascades Ecosystem

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Washington's North Cascades Ecosystem includes one of the most extensive blocks of Federal land in the contiguous United States, and presents a rare opportunity to study and enhance landscape connectivity for wide-ranging carnivores at a very large scale. The region is inhabited by numerous carnivores of conservation concern, including gray wolves, wolverines, Canada lynx, and grizzly bears. Despite its ecological integrity, however, the ecosystem is fragmented by a number of east–west highways. These highways are potential barriers to wildlife movement, and may serve to impede gene flow in certain wildlife populations. The Cascades Carnivore Connectivity Project represented a collaboration of researchers and volunteers working to scientifically evaluate habitat connectivity for carnivores in the NCE.

From 2008 to 2012, we collected genetic material and occurrence data from American black bears and American martens using non-invasive hair-snagging methods, scat detection dogs, and remotely triggered cameras. Here we discuss the results of these surveys, and summarize landscape genetic analyses designed to evaluate habitat connectivity for carnivores. Further, we describe how we used landscape genetic data to validate and improve previously developed connectivity models for black bears. Finally, we provide an overview of rare species detected in our surveys, including the outcome of our search for grizzlies in the North Cascades.