

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Wolverine Climate Change Refugia Study

Type of Project: Research

Discipline: Natural Resources

Funding Agency: US Fish and Wildlife Service

Other Partners/Cooperators: University of Colorado Boulder, NOAA

Student Involvement:

Effective Dates: 7/20/2016 - 3/31/2018

Funding Amount: \$69,927

Investigators and Agency Representative:

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Project Abstract: The wolverine has recently been considered for listing as threatened or endangered under the Endangered Species Act. At that time, the United States Fish and Wildlife Service (FWS) did not decide to list the species. Currently, the FWS seeks improved information, on which to base a re-evaluation of that decision, the deadline for delivering this updated decision by the FWS is April, 2017. We propose a two-part climate-related analysis to support the FWS in assessing possible future wolverine habitat snow-refugia modeling and historic snow variability analysis.

The snow refugia modeling is a hydrologic modeling study at high spatial resolution (-250m) that includes a representation of slope and aspect of the terrain and shading on the snowpack, in order to assess future "snow refugia." The historic snow variability analysis is an analysis of satellite remote sensing of snow extent from year 2000 - present to determine areas of greater and lesser sensitivity to climate drivers (PSD). The satellite data would also be used to validate the hydrologic modeling. The data and analyses performed will inform FWS efforts at habitat modeling for the wolverine.

Keywords: wolverine, climate change models, US Fish and Wildlife Service, **University of Colorado Boulder**