

CASCADES CARNIVORE PROJECT

CONSERVING RARE CARNIVORES:

Assessing the Conservation Status of the Cascade Red Fox, Wolverine,
and Fisher in Washington's South Cascades

REQUEST FOR SUPPORT FROM FRIENDS OF MOUNT ADAMS



Cascade red fox on Mount Adams, WA



CONSERVING RARE CARNIVORES

OVERVIEW

The Cascade Carnivore Project promotes the conservation of montane species and their ecological communities in the Cascade Range through research, community-based science, and collaboration.

We propose a study to improve our understanding of the conservation status of three rare carnivores in Washington's South Cascades. We will document the presence of the Cascade red fox, wolverine, and fisher in Washington's South Cascades, collect DNA samples, and provide updated information on the conservation status of their populations. A lack of information on the current distribution and population status of these threatened carnivores hinders conservation efforts and management recommendations. In order to apply effective conservation measures, an assessment of population trends and an evaluation of threats is needed.

INTRODUCTION

During the last century, many carnivore species in the Cascade Range have suffered significant declines in distribution and abundance including several extirpations e.g. wolverine (*Gulo gulo*), fisher (*Pekania pennanti*), grey wolf (*Canis lupus*), and grizzly bear (*Ursus arctos*). Some species are starting to recover as historical threats such as overharvest and predator control programs have been eliminated. However, climate change and increased outdoor recreation pose novel challenges for wildlife. Species restricted to montane habitats are particularly sensitive to change as they often occur at low densities, are cold- and snow-dependent, and are sensitive to disturbance.

The Cascade red fox (*Vulpes vulpes cascadenis*) is one of the most rare carnivores in Western North America. It was once widespread throughout the Cascade Range from southernmost British Columbia to southern Washington; and now persists in isolated pockets of subalpine parklands and alpine habitats. Today, it is rarely detected by carnivore surveys north of Interstate 90 (I-90) in Washington's Cascade

Range; and remaining populations likely suffer from small size and a lack of range-wide connectivity. Washington's South Cascades comprise the most robust population and is thus an important place to study this rare carnivore, where it is considered a Washington State Candidate Species. A lack of information hinders its protection under the Endangered Species Act.

The wolverine (*Gulo gulo*) was extirpated from Washington by the 1930s and naturally recolonized Washington's North Cascades from British Columbia during recent decades. It is a Washington State Candidate Species and is being reviewed for Threatened or Endangered status under the federal Endangered Species Act. The wolverine is dependent of a persistent late spring snow pack and cold conditions for reproductive denning and food caching, and despite evidence of range expansion, their abundance and density are unknown. Today, while extremely uncommon, it is increasingly being detected south of I-90 and verifiable detections have been documented on the Gifford Pinchot and Okanogan-Wenatchee National Forests, and at Mount Rainier National Park. We have confirmed five individuals through photo identification and DNA analyses including three males and two reproductive females. The extent to which wolverines occur at this southern range limit is not well understood. There are significant knowledge gaps in our understanding of wolverine ecology, in general and little is known regarding the status and threats to wolverines in Washington's South Cascades in particular.

The fisher (*Pekania pennanti*) was eradicated from Washington by the 1950s, due to overharvest, timber extraction, and predator control. It relies upon large conifers and deciduous trees for reproductive cavity dens. It was reintroduced to Washington during the past two decades, and is a Warranted but Precluded federally listed species and a Washington State Endangered Species. It is a priority of the Washington Department of Fish and Wildlife to restore fishers to their historical range in Washington and monitor the success of fisher reintroductions.

All three of these carnivores are rare and wide-ranging. They require vast expanses of intact habitat and low disturbance. Given their status as USFS Regional Forester's Sensitive Species and Species of Greatest Conservation Need on the Washington State Wildlife Action Plan, they are priority species for conservation by land and wildlife managers alike. They iconic species of our last wild places.

OBJECTIVES & METHODS

STUDY AREA

We propose a study to assess the conservation status of populations of Cascade red fox, wolverine, and fisher in the Mount Adams, Indian Heaven, and Goat Rocks Wilderness on the Gifford Pinchot National

Forest. These Wilderness areas provide critical, high-quality habitat for the three species. They support one of the only known populations of Cascade red fox, encompass a portion of the core use areas of the only known wolverines in southern Washington, and comprise a significant portion of the fisher southern Cascade Recovery Area.

Timeline: Summer 2020 ongoing. This is a long-term study

Our objectives are to:

- (1) Document Cascade red fox, wolverine and fisher occurrence
- (2) Identify individual wolverines; and determine their sex, reproductive status, and genetic relationships to individuals in the North Cascades
- (3) Provide fisher detections and DNA samples to the Cascades Fisher Reintroduction Project to monitor their recovery.
- (4) Determine seasonal diet, identify key prey species, and assess the vulnerability of these carnivores to climate change based on their reliance on key climate-sensitive prey populations.

We will employ the following survey methods to achieve these objectives,:

- (1) Multi-species, baited camera stations during winter at a Cascade red fox and fisher home range scale (25-km²)
- (2) Runpole stations during winter at a wolverine home range scale (225-km²); these stations are designed to detect individual wolverine and fisher, collect hair samples, determine sex, and assess reproductive status)
- (3) Snow track surveys to collect DNA samples (scats, urine, and hair) and prey remains; pilot a snow track verification methodology using qPCR
- (4) Scat searches along trails during summer.

In addition to professional quality research cameras, we will employ several wifi-enabled cameras in strategic locations where cell coverage is available (e.g. south side of Mount Adams) to provide real-time carnivore detections. In addition, we will install several high-quality video cameras to provide data on carnivore behavior and high-quality media for communication strategies.

DNA samples will be sequenced and genotyped at the University of California Davis and the USFS Rocky Mountain Research Station National Genomics Laboratory for Fish and Wildlife Conservation. Scats will

additionally be metabarcoded to identify prey remains. Snow samples from putative focal carnivore tracks in the snow will be verified via quantitative polymerase chain reaction sequencing (qPCR) analysis at the USFS Rocky Mountain Research Station where the assays have been developed and tested for these carnivore species.

Our partners include the Cascade Wolverine Project, Conservation Northwest, Gifford Pinchot National Forest, Mount Rainier National Park, Okanogan-Wenatchee National Forest, Oregon State University, Puyallup Tribe, University of California Davis, University of Washington, Washington Department of Fish and Wildlife, Washington Department of Transportation, and Woodland Park Zoo.

REQUEST TO FRIENDS OF MOUNT ADAMS			
Description	Amount	Quantity	Request
Browning Spec Opps Advantage Video Camera Set-Up	\$250.00	10	\$2,500
Wifi-Enabled Camera Set-Up	\$450.00	4	\$1,800
Wildlife Insights Photo Archive	\$500.00	1	\$500
Subtotal			\$4,800
Administration (15%)			\$720
TOTAL			\$5,520

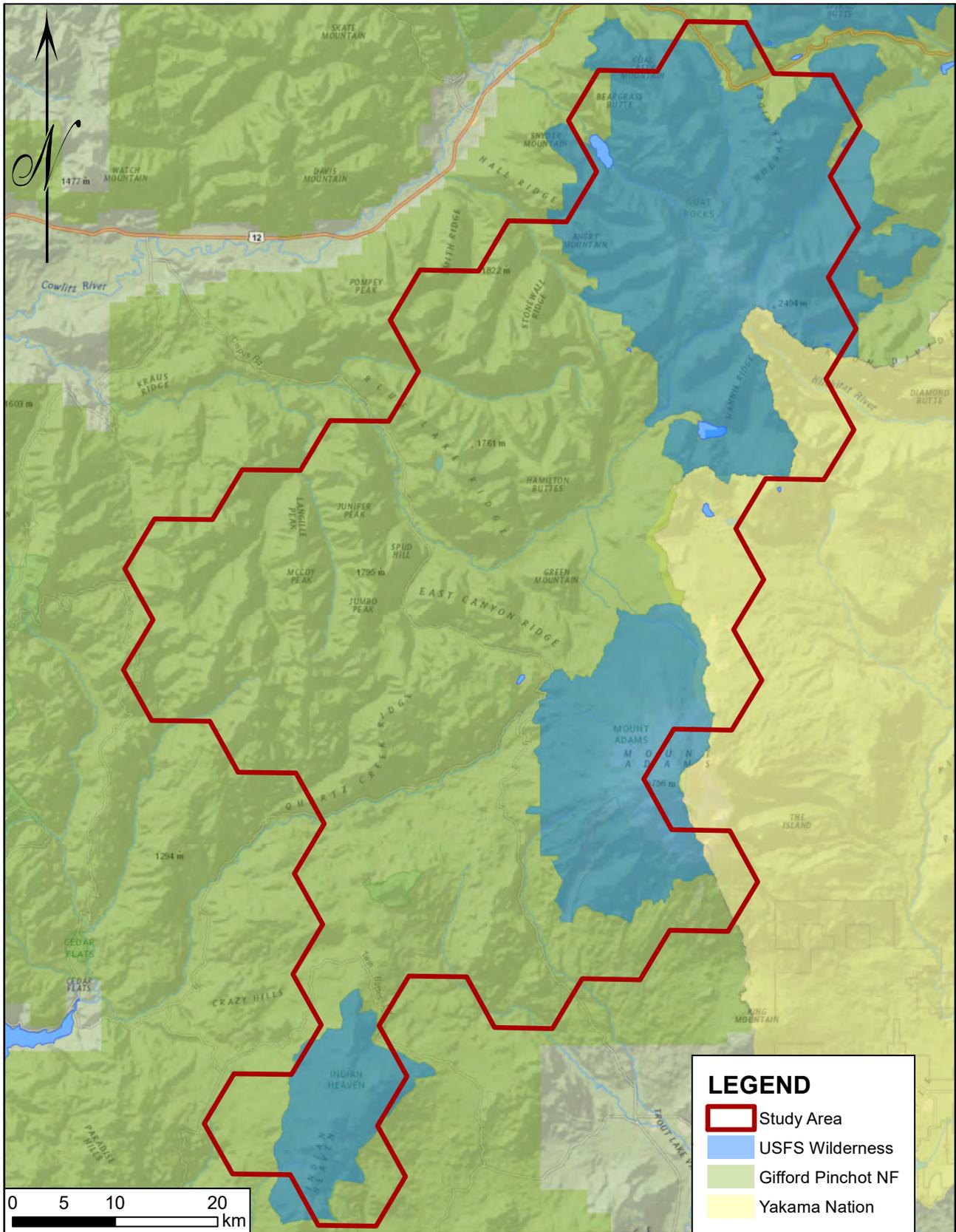


Figure 1. Map of the study area including the Indian Heaven, Mount Adams, and Goat Rocks Wilderness on the Gifford Pinchot National Forest.