



## **Wolverine Tracking Project 2019-20 Annual Report**

The Wolverine Tracking Project is a grassroots citizen science project in which trained volunteers conduct surveys for rare carnivores in the Mt Hood National Forest. The project has three objectives: to collect data on the occurrence of target rare carnivore species in the Mt Hood National Forest, to get people involved in their local national forest, and to teach participants about wildlife and the natural world. This report documents the summer and winter survey seasons, running from April 2019 through March 2020.

### **Project Description**

Primary target species of this project are wolverine, gray wolves, Sierra Nevada red fox, and Pacific marten. Information is also collected on all mammal and ground bird species detected, with emphasis on carnivores. This project collects data from three kinds of surveys: camera trap surveys, year-round; snow tracking surveys, during the winter season; and scat surveys, during the summer season. Genetic samples of gray wolf and Sierra Nevada red fox are collected when encountered on all surveys. This year, scat surveys for wolves were initiated, in addition to scat surveys targeting fox. Surveys followed similar protocols as previous years, with the following changes: set transects were established for the tracking surveys and location data was recorded for all trails crossed, commercial bait was used instead of meat bait for the summer camera traps, and an orientation session was provided for red fox scat survey volunteers. See Appendix A for survey details. The season was cut short one month due to travel restrictions resulting from the COVID-19 virus.

### **2019-20 Results**

#### **SURVEY SCOPE**

##### **Camera Surveys**

Camera sites were divided into two general areas: those near Mt Hood targeting Sierra Nevada red fox, and those near the eastern edge of the National Forest boundary or along likely travel corridors targeting wolves. Eleven cameras around Mt Hood were focused on the Timberline Lodge and Government Camp area, an area of known red fox use, continuing an investigation started last winter to learn more about these foxes. In late summer, two additional cameras were moved to this area (Palmer East and Palmer West) to follow up with an unverified wolverine sighting. In addition, a volunteer placed his personal cameras in the Vista Ridge area to contribute to the project. The cameras targeting wolves were spread out along the eastern edge of the forest as much as possible, targeting dispersing individuals as well as known pack members. In the winter, when access was limited, they were concentrated in three areas, just north of the lower White River, Badger Creek, and FS Road 44, with plans to continue monitoring these areas in the future. In addition, another volunteer placed his personal cameras in the Camas Prairie and Badger Creek areas to contribute to the project.

The majority of the cameras were placed in one spot for the summer season running May/June to October and moved to a different location for the winter season running November to April. Twenty cameras operated during the summer season (two privately owned), at 24 different sites, and thanks to a donation from Defenders of Wildlife, 22 cameras operated during the winter season (two privately owned), at 26 different sites. Due to the COVID-19 virus, camera surveys were halted in mid March. Cameras remain in the field waiting for travel restrictions to end. Camera survey locations are shown in Figures 1 and 2. Camera survey results are presented in Tables 1 and 2.

## **Tracking Surveys**

Seventeen tracking surveys occurred from December through mid March. Due to the COVID-19 virus, the last two trips planned for the end of March were canceled. Tracking surveys covered 47.5 miles, at 11 different locations. Tracking survey transect locations are shown in Figure 3, and results in Table 3.

## **Scat Surveys**

Scat surveys targeting Sierra Nevada red fox scat covered 164.6 miles of trails, the majority of which focused on the Timberline Trail or its offshoots. Scat surveys targeting gray wolf covered 86.09 miles of trails, roads, and off-trail areas on the eastern edge of the National Forest. Scat survey results are presented in Table 4.

## **Genetic Samples Collected**

Genetic samples of gray wolves and Sierra Nevada red fox were collected when found on each camera, scat, and tracking survey. Seven putative gray wolf scat samples were collected, 6 during the wolf scat surveys and one on a camera maintenance visit. Twelve putative red fox samples were collected, 3 from fox scat surveys, 2 from wolf scat surveys, 2 during camera maintenance visits, and 4 incidental. All samples were scat except for one hair sample collected at a camera trap. Grey wolf samples will be analyzed by Oregon Department of Fish and Wildlife (ODFW), red fox samples by Cascade Carnivore Project. A summary of the genetic samples collected is presented in Table 5.

## **FINDINGS**

Gray wolves were detected by cameras at two separate sites. The wolves at each site appear to be two separate individuals, and officials at ODFW have indicated that these may be the breeding pair of the White River pack. Both detections occurred in October.

Sierra Nevada red fox were detected by cameras at seven different sites. These sites were all concentrated near Timberline, between elevations of 4780 and 6680 feet, and all sightings occurred between late September and March. Only one detection occurred when the ground wasn't covered with snow, this occurred above treeline at the Palmar West camera. The detection occurred in late September; however, the camera was only placed there in early September to follow up with a possible wolverine sighting, so data from this high elevation habitat is unavailable for the majority of the summer.

Pacific marten was detected during one tracking survey along the Mt Hood Meadows transect, at approximately 4500 ft elevation; on this survey four separate trails were documented. One camera site detected Pacific Marten at an elevation of 5275 ft.

A wolverine sighting was reported on Palmer Glacier, Mt Hood in September 2019. To verify the sighting, a team was dispatched to search the area for tracks or sign of wolverine, and two cameras were installed near the area of the sighting. However, the report remains unverified, and wolverine have not been detected on Mt Hood this year. The project continues to provide a monitoring system in the event they return to the National Forest.

Many non-target species were also recorded including coyote, cougar, bobcat, black bear, weasel, striped skunk, blacktail deer, elk, and many hares, squirrels, and small mammals. Deer and coyote were the most abundantly detected species on the camera surveys; snowshoe hare and Douglas squirrel were most abundant in the snow tracking surveys. Looking at just the east side of the forest, elk were the most commonly detected species on the cameras.

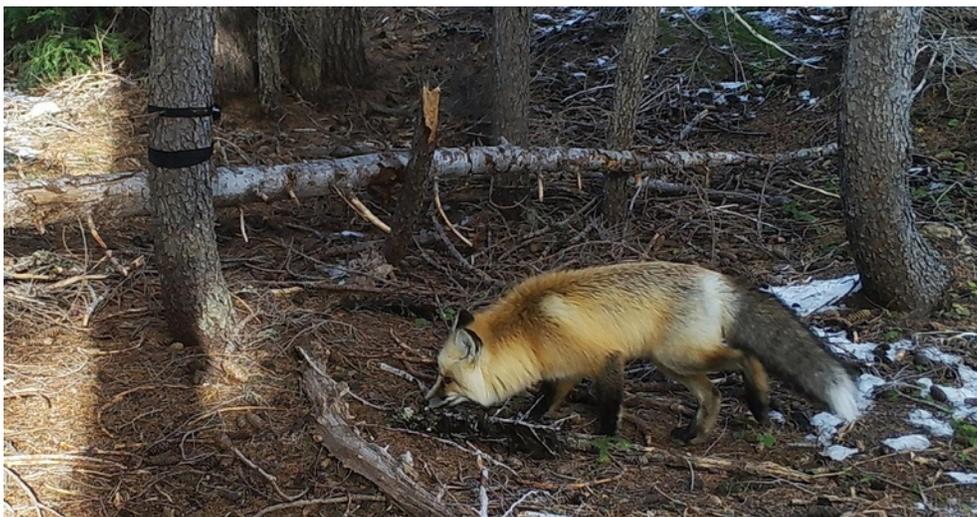
## **VOLUNTEERS**

As total of 225 volunteers were involved in the project, volunteering over 4225 hours. Two project support interns also assisted this project, putting in over 1,170 hours. Volunteers contributed 2251 hours for the

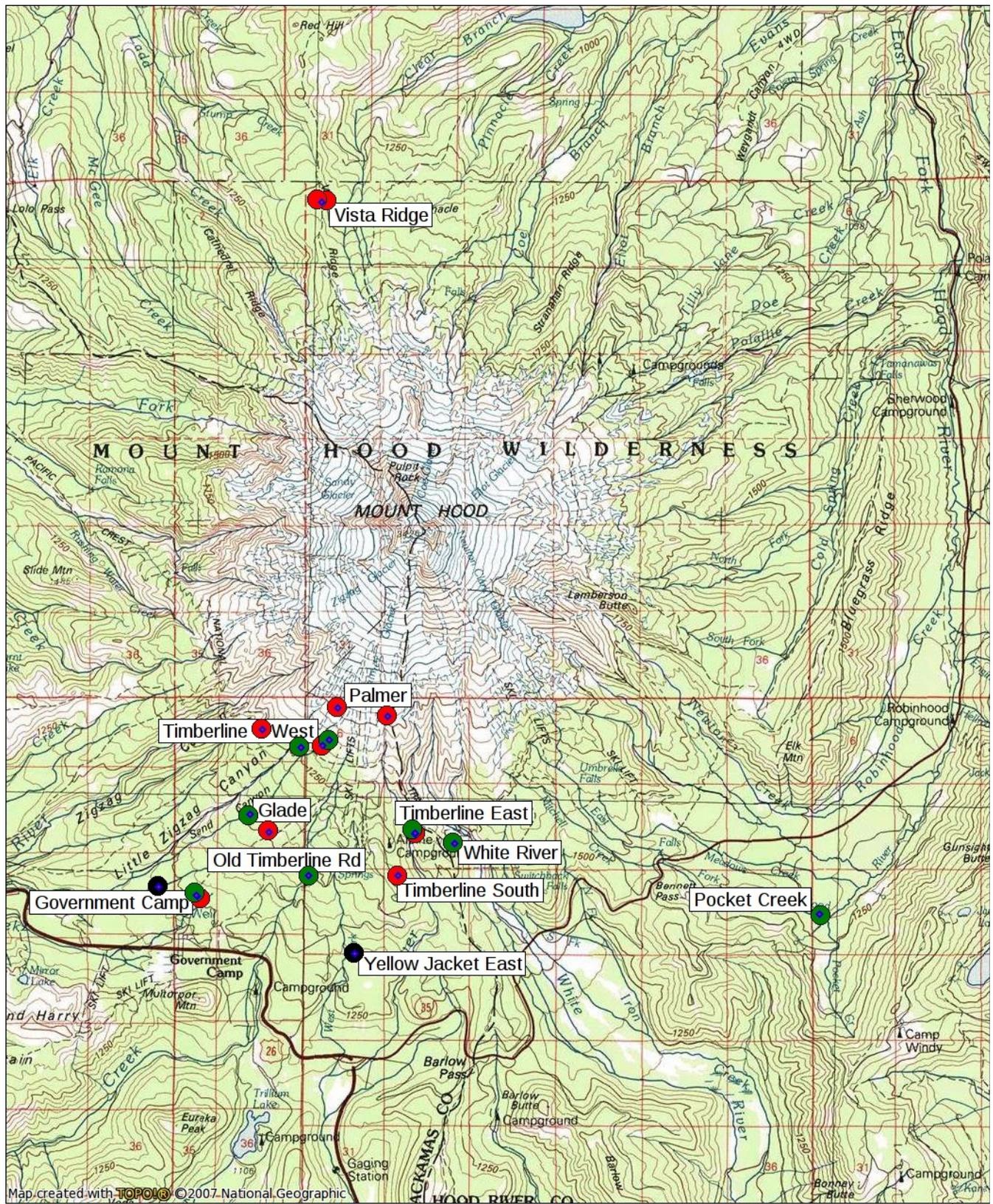
camera surveys, 465 hours for the scat surveys, and 1,213 hours for the tracking surveys. Participants additionally donated over 35,900 miles of driving. This is an increase in both time and mileage contributed to the project compared to previous years, while our volunteer numbers remain similar. The level of enthusiasm and commitment from volunteers is what continues to make this project a success.

### **Acknowledgments**

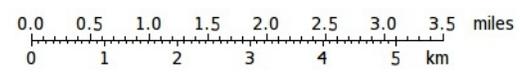
Cascadia Wild would like to thank the Mt Hood National Forest, Defenders of Wildlife, and Patagonia for their funding and support, without which this project could not happen.



**Figure 1: Camera Survey Locations 2019-20, Mt Hood area**  
 summer only=red; winter only=green; all year=black

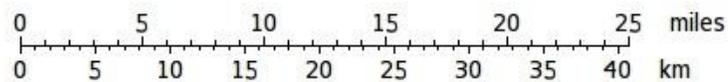
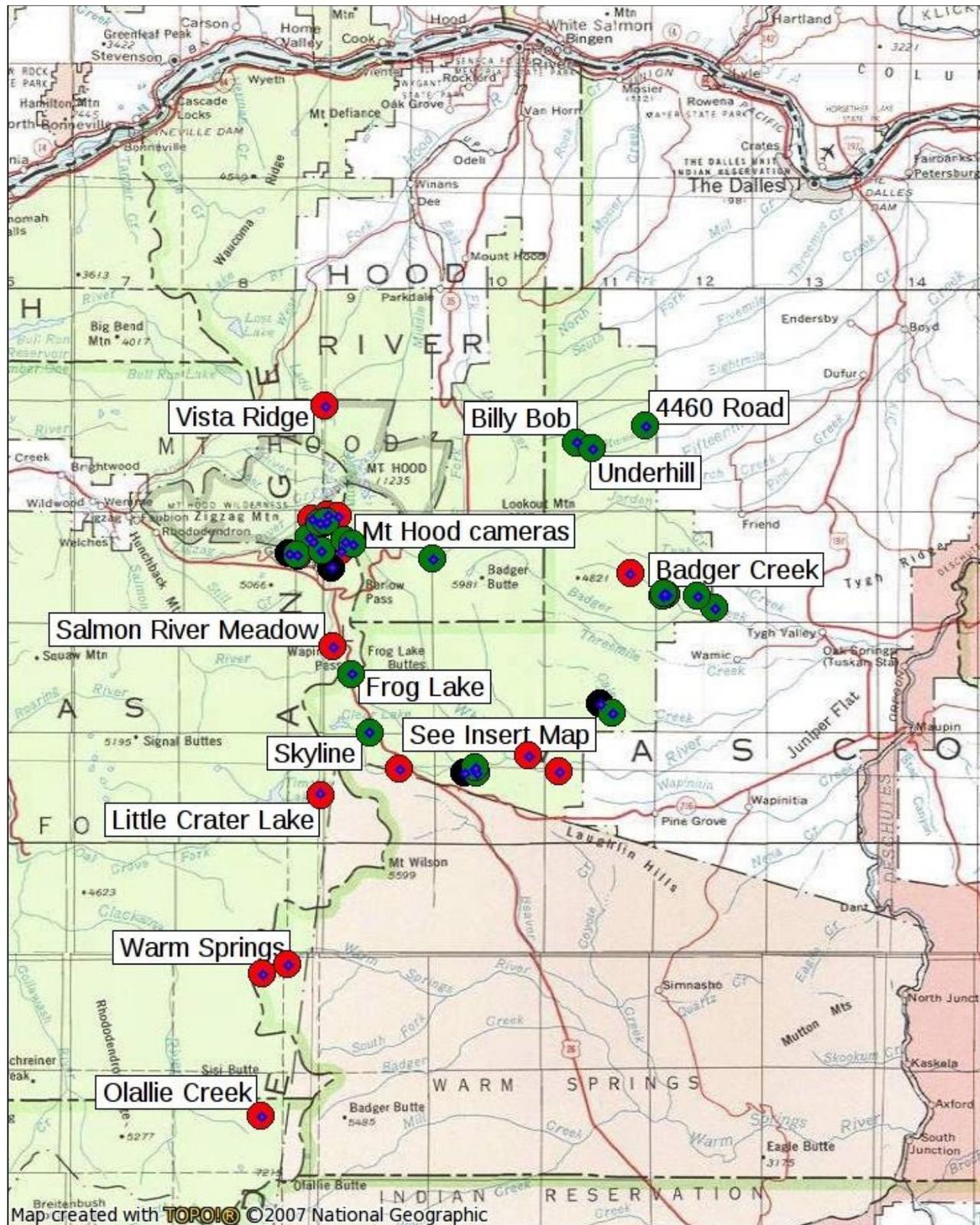


Map created with TOPOIG ©2007 National Geographic



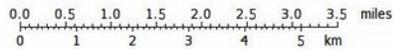
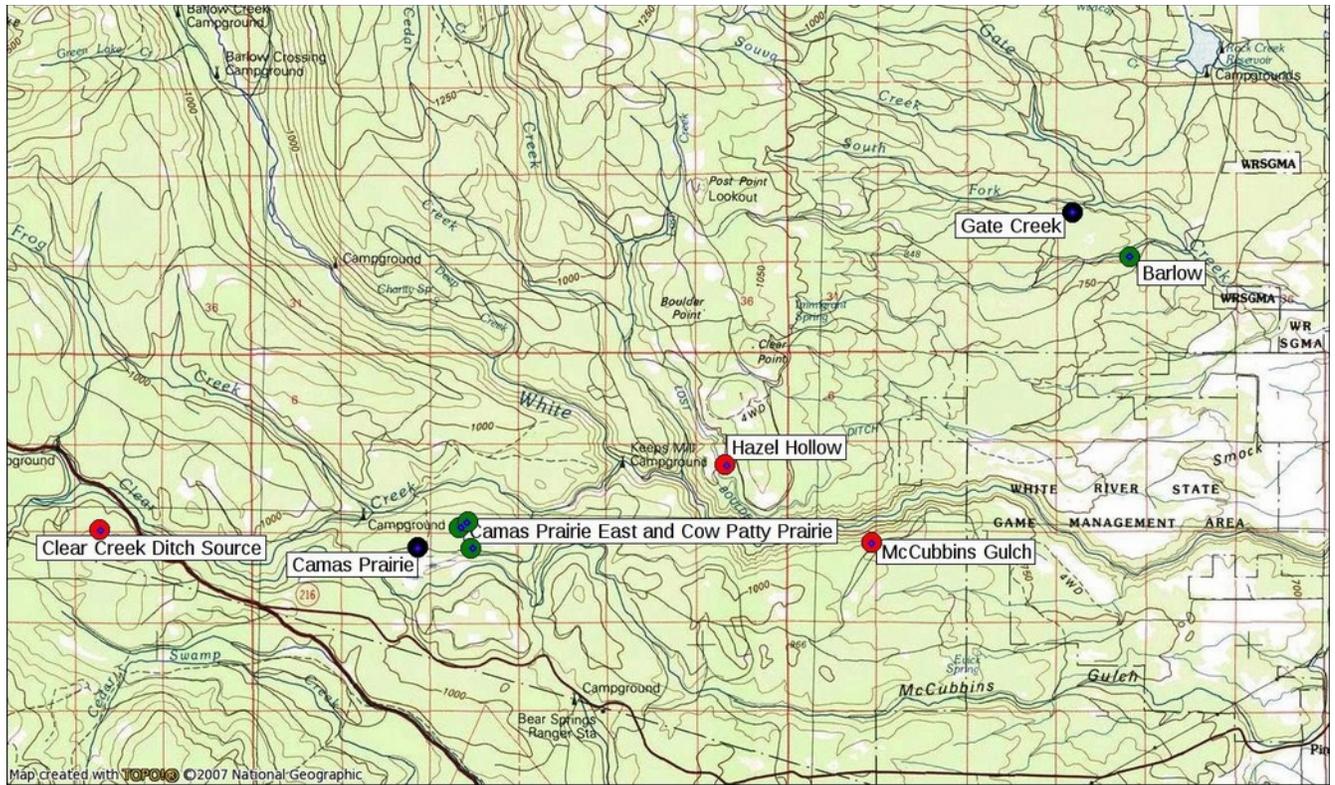
TN MN  
 14 1/2  
 04/23/20

**Figure 2a: Camera Survey Locations 2019-20, East side locations**  
 summer only=red; winter only=green; all year=black



TN / MN  
 14 1/2  
 04/20/20

**Figure 2b: Camera survey locations 2019-20: East side locations insert**  
 summer only=red; winter only=green; all year=black



TN MN  
 14½  
 04/20/20





Figure 3: Tracking Survey Locations Winter 2019-20

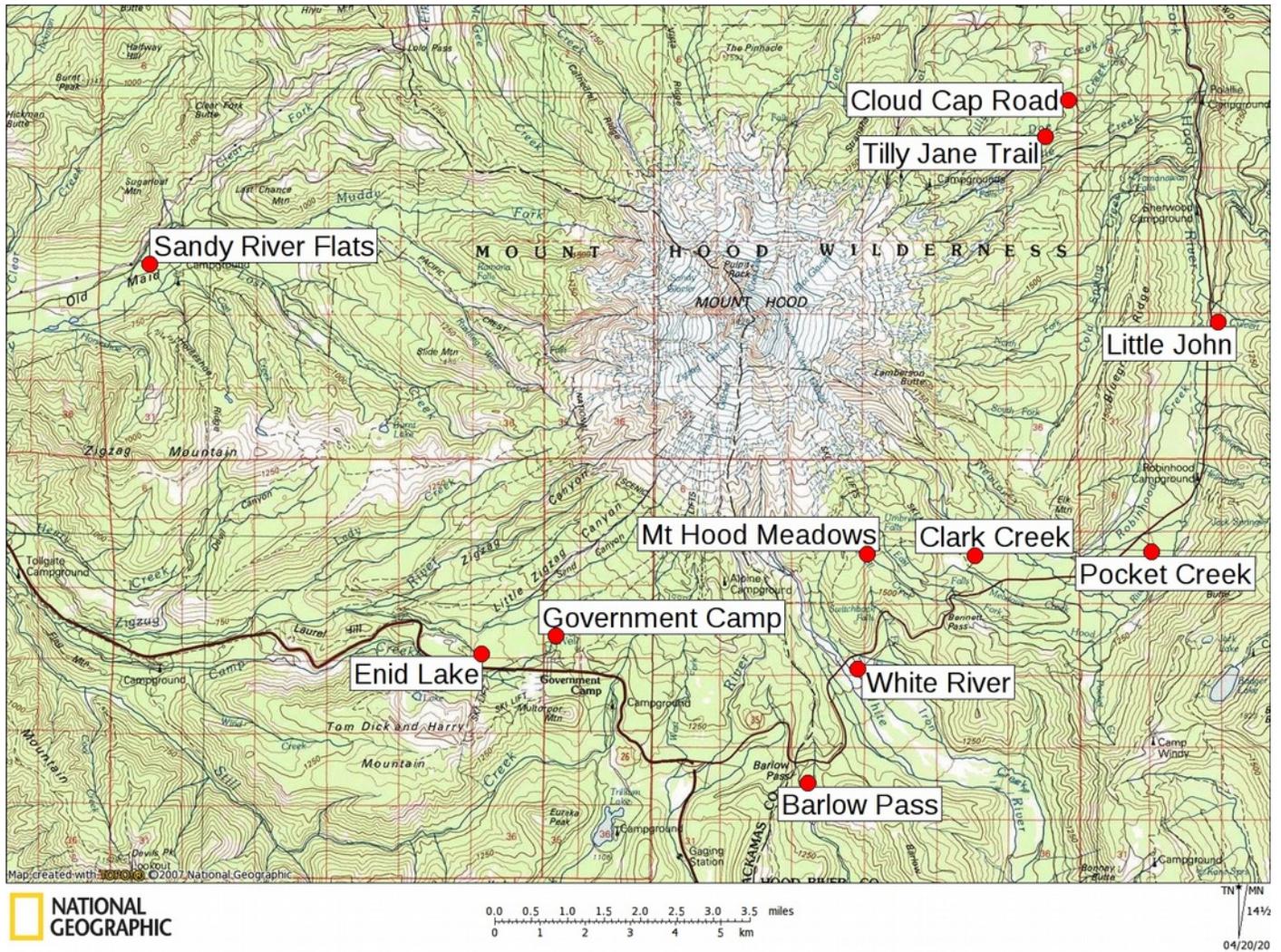


Table 3: Tracking Survey Results Winter 2019-20

Species	Survey Distance (miles)	Snow Tracking Quality (0=worst 4=best)	Date		Starting Elev (ft)	Transect
	1.78	2	12/18/2019		5210	Mt. Hood Meadows
	2.69	2	2/11/2020			
	2.91	2	12/14/2019		4480	Clark Creek
	3.41	2	1/25/2020			
	3.14	1	3/6/2020			
	2.51	2	1/18/2020		4230	White River
	3.7	3.5	12/7/2019		4150	Barlow Pass
	3.86	3	3/8/2020			
	2.72	3	12/28/2019		4040	Government Camp
	1.4	3	1/4/2020		3800	Pocket Creek
	2.24	0	2/1/2020		3800	Cloud Cap
	3.61	3	2/22/2020		3800	Tilly Jane Ski Trail
	1.36	3	1/16/2020		3400	Enid Lake
	2.88	4	2/2/2020		3360	Little John
	3.56	3	2/29/2020			
	2.9	2	12/1/2019		2000	Sandy River Flats
	2.83	3	1/19/2020			
Coyote						
Bobcat						
Pacific Marten	4					
Weasel	9					
Black-tailed Deer						
Snowshoe Hare			4	2	1	1
Squirrel (Douglas/Northern Flying)	11	5	12	3	4	4
Mouse	7	1		1	1*	
Unknown Small Mammal		2				
Unknown Large Mammal			2			

\*denotes sign other than tracks

Table 4: Scat Survey Results Summer 2019

Sample Type	Survey Distance	Survey Date	Sierra Nevada Red Fox					Gray Wolf																																								
			Government Camp Trails	McNeil Pt to Ramona Falls	Tim. Lodge to Umbrella	Timberline Trail		Abbot Pass	Bonney Crossing	Camas Prairie		Clear Creek Crossing		Clear Lake		FR 42-220	FR 44	FR 230	FR 2131	Keeps Mill	McCubbins	White River, Lower																										
	8	7/18/19						6	9/21/19		4	6/23/19		4	7/7/19		4.37	9/8/19	1.97	10/13/19	3.25	6/4/19	2	7/8/19	3	8/19/19	4.5	6/18/19	3.5	7/6/19	3	10/20/19	8	8/18/19	17	11/9/19	4	8/18/19	2	8/17/19	5	8/19/19	3.5	7/14/19	2	8/11/19	5	8/17/19
Red Fox					2																		1																									
Gray Wolf											1												3											1														
Coyote Sign								13		2	26										24	25	3	8	9	2	5							4		11	6	1	yes						32			

Table 5: Genetic Sample Collection Results 2019-20

Species	Sample Type	Survey Type	Camera	Fox Scat	Wolf Scat	Tracking	Incidental
			Red Fox	Hair	1		
Red Fox	Scat	2	2	2		4	
Gray Wolf	Hair						
Gray Wolf	Scat	1		6			

## Appendix A: Project Description

### SURVEY STRUCTURE

#### **Camera Surveys:**

Wildlife camera surveys are carried out year-round, divided into a summer season and winter season. Camera site locations are selected based on accessibility, habitat suitability for target species, previous detections or known habitat use, and/or to collect data for under-surveyed areas. Due to seasonal changes in access, most camera sites are moved between the summer and winter survey seasons, while some sites are maintained throughout consecutive seasons or years.

Bait for the camera sites varies with the season and target species. On most camera set ups, three different baits and lures are used: a long-range scent lure designed for canines and mustelids (Caven's Gusto), fox urine, and either a commercial bait (Hiawatha Valley Predator or Canine Force) or meat bait. The commercial bait is placed beneath a down log, and meat is attached to a tree approximately three feet off the ground using chicken wire. Commercial bait is used in the summer and on cameras where it is important to keep scent to an absolute minimum, such as many of the cameras targeting wolves; meat bait sourced from an eco-friendly pest control management company and is used during the winter. Additionally, each baited tree or log is equipped with a hair snag belt to collect hair samples. Camera sites are generally visited approximately every 3-4 weeks to replenish the baits, retrieve memory cards, ensure the camera is still operating, and collect any genetic samples at the vicinity of the site.

Every mammal, ground bird, and vulture detected at a camera site is recorded, including domestic animals, unidentified humans, and unidentifiable animals. For each detection, the following data is recorded: date; time; species; number of juveniles, yearlings, or adults (if identifiable); number of males and females (if identifiable); and any relevant behavior or reaction to the bait.

#### **Tracking Surveys:**

Snow tracking surveys are carried out on snowshoes, weekly from early December through March. Every animal trail that crosses the survey path is recorded. As of winter 2019-20, all trails are recorded with a GPS waypoint, and additional written documentation and pictures are taken for all carnivore trails and a subset of other trails. Also begun in winter 2019-20, tracking survey locations follow predetermined transects, selected to cover as many different habitats as possible within the snow zone. Transects generally follow recreational trails or closed roads for at least two thirds of their length and are one and a half miles long. Trip leaders are encouraged to survey additional areas off-transect, time permitting. Survey dates are decided at the beginning of the season; therefore, snow track quality (the ability of the snow to record clear tracks) is variable and a snow track quality rating is also recorded.

#### **Scat Surveys:**

Scat surveys are conducted during the summer when the snow is gone. Volunteers choose where, when, and how far to survey; recommended survey locations are provided based on habitat suitability or known use by a target species. Most surveys are done on foot, with volunteers continually keeping an eye out for scat samples as they walk. Samples are photographed and collected in a paper bag. The samples and photographs are reviewed and assessed by Cascadia Wild for species confirmation.

Two types of scat surveys are carried out. Sierra Nevada red fox scat surveys are done June to October, in the vicinity of Mt Hood above 4000 ft elevation, mainly centering on the Timberline Trail and its connecting trails or offshoots. Gray wolf scat surveys were started in 2019. They are done April to November, around the eastern boundary of the Mt Hood National Forest and along likely dispersal routes.

### PARTICIPANT INVOLVEMENT

#### **Camera Survey Participants - "Camera Crew":**

Camera survey volunteers are divided into groups of 3-8 people, and each group is responsible for maintaining a camera site for the season (summer or winter). Camera volunteers attend three trainings: a

two-hour classroom session, a full-day field session, and an optional one hour GPS training. Camera volunteers are provided with handbooks, site instruction manuals, genetic sample collection supplies and instructions, maps, and all other relevant equipment required for site maintenance, including optional safety equipment.

**Tracking Survey Participants - “Tracking Teams” and “Tracking Leaders”:**

Tracking surveys are done in groups of up to 12 people, including two tracking trip leaders. Leaders have a minimum of two seasons tracking experience and must pass written and field evaluations before being qualified to lead. Survey participants attend a two-part training, two hours in the classroom and three hours in the field. Participants are further mentored during the surveys themselves, not only in animal tracking but also in related topics, such as natural history, awareness activities, and wilderness survival. The aim of this blend of topics is to increase not only participants’ knowledge but also their feelings of connection to their local area.

**Scat Survey Participants - “Scat Surveyors”:**

Scat survey volunteers go out on their own, provided with a detailed instructional booklet on scat collection and identification, scat collection supplies, and maps.

Starting in summer 2019, Sierra Nevada red fox scat survey volunteers had the option to attend a two-hour group orientation or a one-hour one-on-one training to cover scat identification and collection procedures.

Gray wolf scat survey volunteers are recruited from current volunteers that have expressed interest in the survey. More formalized training sessions on scat identification and collection procedures are planned for summer 2020.