

**CITIZENS WILDLIFE MONITORING PROJECT:
WINTER 2011-2012 FIELD SEASON REPORT**



June 2012

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Cover image: Trail of a coyote leading up to and entering the west-bound lanes of Interstate 90 along the Gold Creek transect. Photo by Brian Booth

The full report is available online at:

<http://www.conservationnw.org/monitoring>

Citizen Wildlife Monitoring Project partner organizations: Conservation Northwest, Wilderness Awareness School, and I-90 Wildlife Bridges Coalition



ABSTRACT

The winter program of the Citizen Wildlife Monitoring Project (CWMP) uses trained volunteers to record the presence and movement of wildlife in the Washington Cascades and across the state. Documentation occurs through snow tracking surveys and remote camera installations. The 2011-2012 field season marked the sixth season of winter tracking data collection along the I-90 corridor transects and the 3rd season for winter remote camera monitoring in remote habitat targeting detection of specific species.

Winter tracking surveys were conducted following fixed transects along Interstate 90 in the vicinity of proposed wildlife crossing structures between Snoqualmie Pass and Easton. This season also marks the second winter with significant highway construction in progress, including partial completion of wildlife underpasses at Gold Creek, one of the project's field sites. This year's transects found the usual suspects: deer, bobcat, and elk, with the notable addition of a coyote using the partially completed underpass along Gold Creek. The track pattern showed a choice by the coyote to utilize the partially completed new underpass, which allowed the species to go under the interstate's eastbound lanes while still having to cross at road level over the westbound lanes. It is the first time that a species was recorded using the partially completed new underpass location.

Remote camera monitoring focused on detecting wolves and wolverines, using, in addition to cameras, run pole stations, hair snag stations, and informal tracking surveys. Last season, our remote cameras discovered the Teanaway wolf pack. This season we documented a wolverine, the first recorded south of Highway 2 in decades and an individual previously unknown from other professional research projects in the Cascades.

The Citizen Wildlife Monitoring Project relies on the energy and enthusiasm of trained citizen scientists. During our 2011-2012 winter season, 84 volunteers contributed, 2581 hours to wildlife monitoring in Washington.

PROJECT OVERVIEW

The Citizen Wildlife Monitoring Project is a joint project of I-90 Wildlife Bridges Coalition (I-90 WBC), a coalition focused on the connectivity measures in the I-90 Snoqualmie Pass East Project; Wilderness Awareness School (WAS), an environmental education organization; and Conservation Northwest (CNW), a wildlife and habitat conservation organization. The project uses trained volunteers to monitor the location and movement of wildlife in Washington using remote camera placements and wintertime snow tracking, run pole stations, and hair snag stations. We work in concert with agencies and our volunteers magnifying the amount of work that wildlife biologists can do themselves.

The project focuses on 1) the vicinity of proposed wildlife crossing sites along Interstate 90 in the Washington Cascades between Snoqualmie Pass and Easton, and 2) elsewhere in Washington State when looking for rare and elusive carnivores like wolves, wolverines, and grizzly bears.

The I-90 Snoqualmie Pass East Project is a 15-mile highway improvement project that includes connectivity improvement measures in 14 connectivity emphasis areas. Construction on the first phase of the I-90 Snoqualmie Pass East Project has been initiated as funded previously by the Washington State Legislature. Construction was inactive during the snow tracking season, although significant equipment and construction materials were present throughout the project area.

A complete description of the CWMP's goals and methods and copies of previous seasons' reports are available online at conservationnw.org/monitoring.

SUMMARY OF WINTER FIELD WORK

I-90 Snow Tracking

This winter's tracking conditions for I-90 snow tracking transects were milder with fewer storms than last winter's. Few transects were cancelled because of weather, and snow conditions for snowshoeing, tracking, and remote camera site visits were more

stable than in 2010-2011. Snowtracking volunteers this winter again included over 20 students from the Learn and Serve Environmental Anthropology Field School (LEAF, <http://www.edcc.edu/leaf/>) a program of Edmonds Community College run by anthropology department chair Thomas Murphy, PhD.

Photos of tracks taken in the field and identified by monitoring team leaders were reviewed by two experts to determine correct field identification. This year's photo submission protocol was amended to encourage team leaders to submit multiple images of sign such as tracks and to include descriptive written information, to better help expert identifiers. It turns out that the citizen monitor observer reliability is very high. Experts found that, as in the first field season, team leaders correctly identified all wildlife tracks.

Remote Cameras

From November 2011 through May 2012, remote camera and informal track survey monitoring efforts were conducted to: 1) Document the presence and movement of wolves in the central Cascades, and 2) document wolverines, outside of their known range in the Cascades, in places where recent credible snowtrack reports have occurred. In 2011, in close coordination with our Advisory Council, we continued to strategically monitor targeted species in the winter months to complement our more robust, summer-fall remote camera program. Specific to wolves, we maintained a presence in the Teanaway where a pack was previously confirmed to help better understand winter movement patterns. We also sent teams and cameras into areas south and east of the Teanaway Pack's known movements to monitor potential expansion of the pack and document any other wolf presence in nearby landscapes.

Remote camera sites were located on federal, state, and private land, with land owner permission. Site locations targeting the presence of gray wolves included Naneum Creek, Quilomene Creek, Bumping Lake, Reecer Creek, and two sites in the Teanaway Ridge area. Site locations for wolverine included Mount Baker and the Chiwaukum Mountains near Leavenworth. *See Appendix B for maps of all site locations.*

Remote camera monitoring for the winter season focused on detecting wolves and wolverines, using, in addition to cameras, run pole stations, hair snag stations, and informal tracking surveys.

Citizen Volunteers

Nearly a hundred volunteers took part in formal transect surveys and participated in the winter remote camera monitoring and winter marten surveys. Conservation Northwest shared volunteers and resources from our program to the Cascades Carnivore Connectivity Project's American marten surveys in the I-90 corridor. Training and leadership was provided by Western Transportation Institute. The results of their 2011-2012 winter marten work can be viewed on the Cascades Carnivore Connectivity Project website, cascadesconnectivity.org

RESULTS

I-90 Snow Tracking

During the 2011-2012 winter season, volunteers logged 17 days of field work on I-90 transects. Each site was visited four times, except Price Noble West, which was visited three times. Of the 98 observations made, 84 were tracks and 14 sign (e.g. scat, hair, or claw marks on trees). This year, all observations were identified to species, except for 7 made in poor snow conditions. By far this was the strongest year for identification, likely due to the continued dedication and expertise of team leaders from prior years. The season was typical of past years, with coyotes again making up the majority of observations (67%), followed by bobcat and beaver (making up 10%). Together, these three species comprised more than 75% of observations this year (Table 1).

Table 1. Number of observations of detected species by year						
Species	2007	2008	2009	2010	2011	2012
Bobcat	14	18	36	12	8	9
Coyote	15	35	55	29	39	61
Raccoon	1	0	0	2	3	3
River Otter	2	4	6	0	2	1
Beaver	4	0	3	16	7	9
Cougar	2	3	0	5	0	1
Marten	6	0	1	0	6	0
Black Bear	1	1	0	0	0	2
Elk	2	1	19	3	7	0
Mule Deer	2	3	1	4	3	5
Mink	1	0	0	0	0	0

Easton Hill South had the most detections (nearly 25%; Table 2), primarily coyotes, and the first black bear sign since 2007, through claw marks on trees. A cougar, the only project priority Level 1 species (*See Appendix C for Priority Species List*) detected this year, was also detected at Easton Hill South, the same location where a cougar was recorded in 2010.

Table 2: Number of observations 2012
by site

Site	Observations
Easton Hill South	27
Easton Hill North	19
Gold Creek North	6
Cold Creek South	7
Price Noble East South	18
Price Noble West South	4
Price Noble East North	7
Silver Fir / Hyak	19

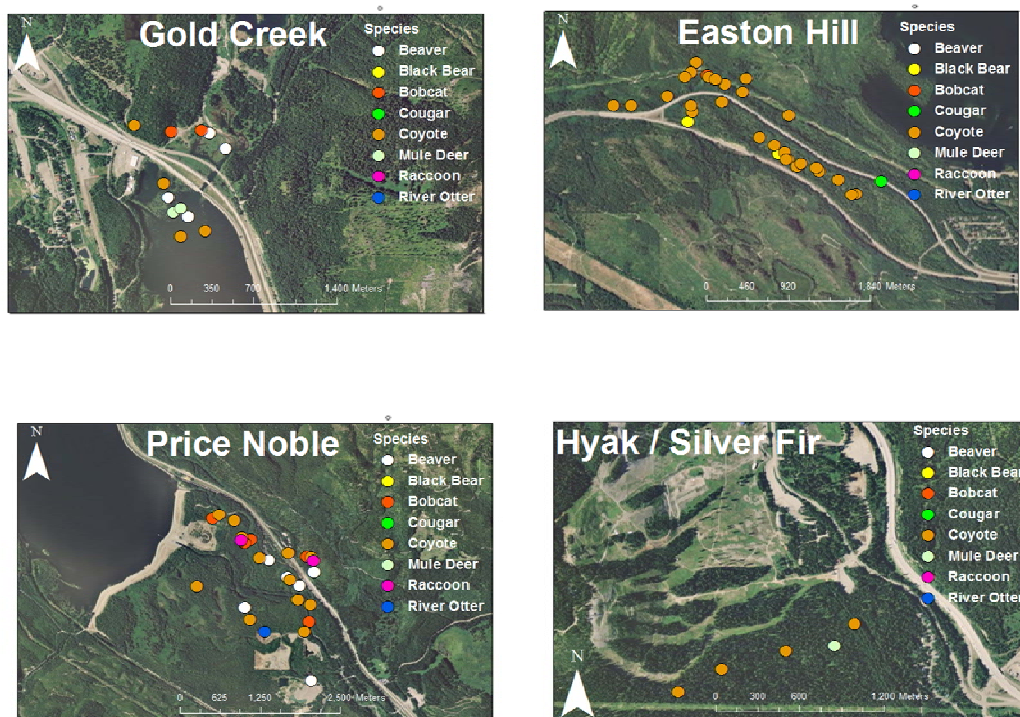


Figure 1. Maps of project transects with species detections

Gold Creek was the location of the very first tracks of wildlife using the newly completed wildlife crossing underpass. The observer that day, volunteer wildlife monitor Brian Booth, noted:

"From there, it [a coyote] turned north, crossed a frozen portion of the pond near the north end of transect, went under the new wildlife eastbound-lanes underpass at the north end of the transect, and crossed the westbound lanes of the highway. The coyote went directly through the center of the underpass, directly uphill to the westbound lanes, and entered the highway without hesitating, turning, or breaking stride."



Photo 1. Coyote tracks in mud under the east-bound lanes of I-90 in the Gold Creek wildlife underpass. Photos by Brian Booth.



Photo 2. Trail of the same coyote in Photo 1 leading up to and entering the west-bound lanes of Interstate 90. Photo by Brian Booth.

At Easton Hill North, bobcat tracks were recording coming directly from the roadway and leading to a complex of dens about 200 meters away. Coyotes and

bobcats left tracks at other transects, but only these two examples showed an animal clearly entering, exiting, and crossing I-90.

This year, as noted, a single Level 1 species (cougar) was detected. There were five detections of a project priority Level 2 species (mule deer), at Gold Creek and Silver fir-Hyak (*See Appendix C for Species Priority List*). This was the first year of monitoring that elk was not detected at these sites. While overall species richness was similar to other years, species diversity (a simple count of species) and their evenness (quantifying how equal the abundance of species are) was lower than average.

I-90 snow tracking observer reliability

Over the course of the winter, 23 data points were collected from team leaders. Coyotes were the most commonly reported species in the sample. Team leader experience and training levels were similar to last year's with many of team leaders holding professional certifications in wildlife tracking and sign identification, having taken the Wilderness Awareness School's intensive tracking training program (or another similar training), and having participated in the Citizen Wildlife Monitoring Project for three or more years. This was the second season we performed an observer reliability assessment to help determine the reliability of snow tracking data collected on track transects. For the second season in a row, team leaders identified every single track correctly in the field, a testament to citizen scientist training and expertise.

Table 2. Summary of observer reliability data.	
Number of Observers Tested	8
Total Samples Submitted	23
Correct	18
Incorrect	0
Definitive Identification Impossible from Photograph	5
Species Positively Identified	Mountain lion, bobcat, coyote, northern raccoon, American beaver

Table 3. Summary of team leader experience, training, and certification.		
Training, Certification, or Experience		Number of Team Leaders
Cybertracker Conservation Certification*	Level 3	3
	Level 2	1
	No Certification	4
Wildlife Tracking Intensive*	Participation, no certification	2
	Primary Path certification	1
	Advanced Path certification	3
	Never participated	2
Other Tracking Training	More than 3 weeks of training	6
	Less than 3 weeks of training	2
	None outside of project trainings	0
Years Involved with Project	0-1 years	2
	2 years	0
	3 years	3
	≥4 years	4

*For information about Cybertracker Conservation Certification and the Wildlife Tracking Intensive, see the 2010-2011 Winter Field Season Report available at: conservationnw.org/monitoring.

Remote Cameras

During the 2011-2012 winter season, project volunteers documented a host of wildlife at a total of seven remote camera sites in the Central (Chinook pass to Stevens Pass) and North Cascades (Stevens Pass to the Canadian border).

This season, monitoring teams documented a wolverine at one of the two Chiwaukum Mountains camera sites. On April 1, 2012, the Chiwaukum-S. Fork 2 camera site caught a wolverine on film. Then, from April 7th to May 1st, 793 images of a single wolverine were recorded at this station. The photos showed clear views of the animal's chest blazes, a key characteristic for identifying individual wolverines. At this site, hair samples were collected for DNA testing. DNA results later confirmed that this

wolverine is a female. She has not been recorded by research efforts to date in the Cascades, and she is no offspring of any wolverine previously documented by research efforts. DNA results also show that she is Halotype C, consistent with other North Cascades wolverines.

In total, our cameras recorded and continued to verify consistent presence of common species, including black bear, bobcat, cougar, coyote, deer, and elk. See *Appendix A for photo highlights for the 2011/2012 winter monitoring season and Appendix B for maps of each camera site location*. Figure 1 below shows number of species at each location; Figure 2 shows number of species visits, and which species, at each site.

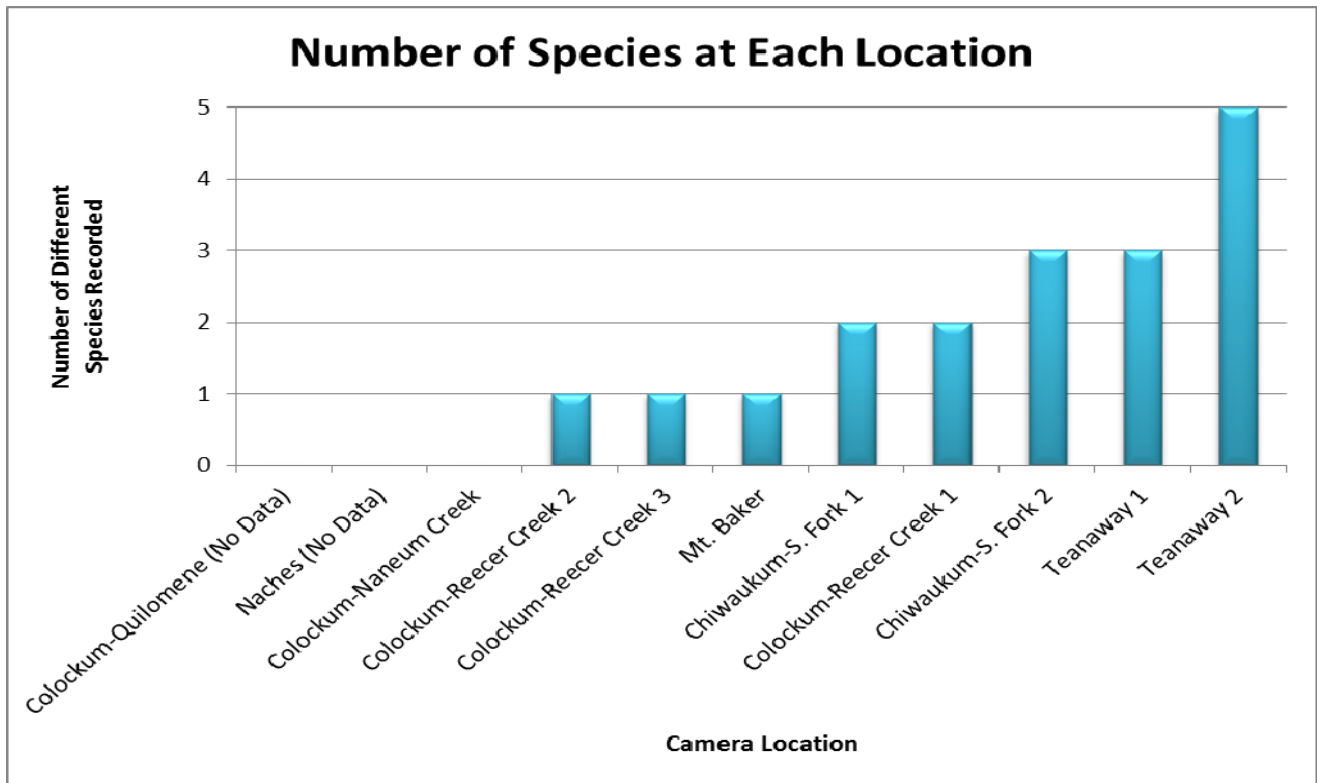
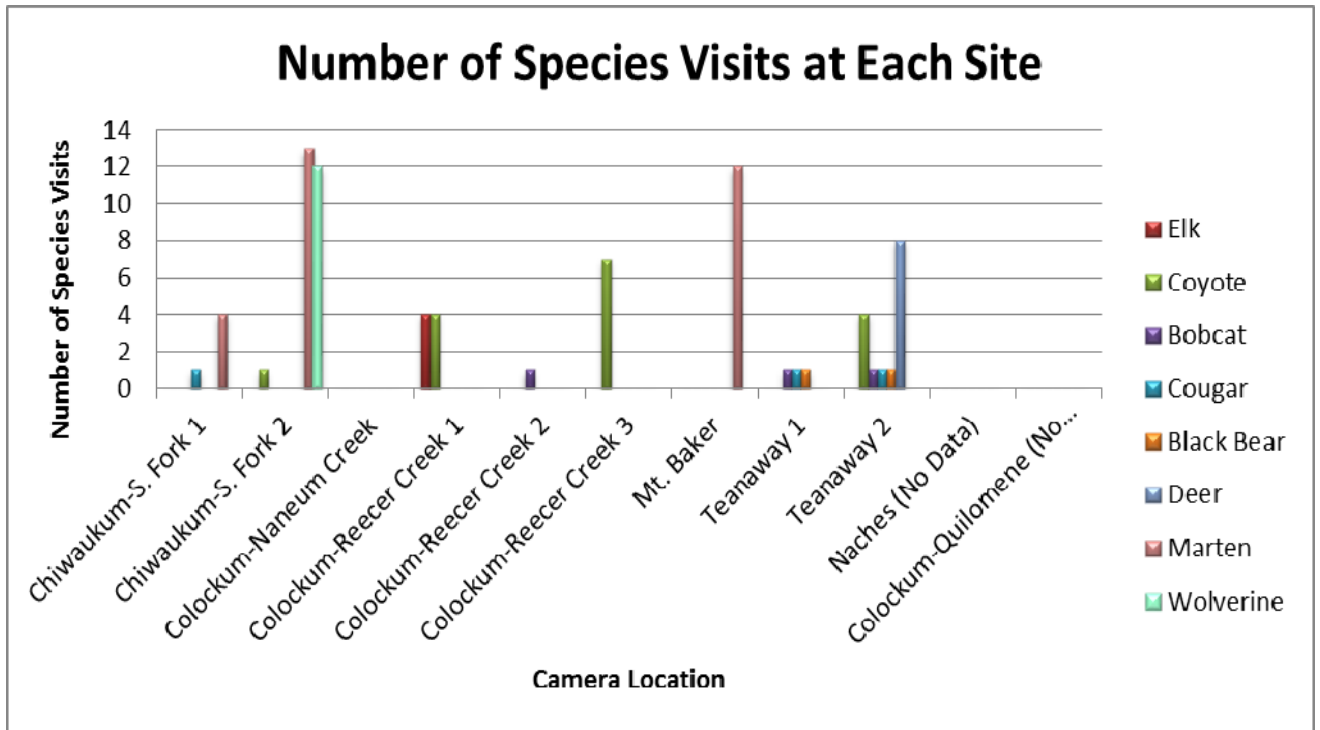


Figure 2. Number of species at each location



	Elk	Coyote	Bobcat	Cougar	Black Bear	Deer	Marten	Wolverine
Chiwaukee-S. Fork 1	0	0	0	1	0	0	4	0
Chiwaukee-S. Fork 2	0	1	0	0	0	0	13	12
Colockum-Naneum Creek	0	0	0	0	0	0	0	0
Colockum-Reecer Creek 1	4	4	0	0	0	0	0	0
Colockum-Reecer Creek 2	0	0	1	0	0	0	0	0
Colockum-Reecer Creek 3	0	7	0	0	0	0	0	0
Mt. Baker	0	0	0	0	0	0	12	0
Teanaway 1	0	0	1	1	1	0	0	0
Teanaway 2	0	4	1	1	1	8	0	0
Naches (No Data)	0	0	0	0	0	0	0	0
Colockum-Quilomene (No Data)	0	0	0	0	0	0	0	0

Figure 3. Number of species visits at each site and which wildlife

American martens paid the most visits to our Mt. Baker and Chiwaukee camera sites, for a total of 25 separate site visits. That's not surprising for these subalpine sites, expected winter marten habitat, and this rate of observation is consistent with previous observations from past camera sites in marten habitat.

Cameras situated in lower elevation sites for the winter captured carnivore and feline presence at nearly every site, as expected given their location near or in winter range for these species. Cameras did not capture images of common ungulates (deer and elk), being outside the winter range for these species.

The Teanaway camera site #2 (followed by Teanaway site #1) captured the most species for any camera site during the 2012 camera season, adding to the overall consensus of the Teanaway area as one of the richest wildlife habitats in Washington State.

The cameras at Naneum Creek and Quilomene experienced technical problems in the field and captured no images. The problem was software, and these Bushnell Trophy units have since been fixed. The Naches/Bumping Lake site was installed late in the winter season to follow up on wolf reports. It did not capture any images in the six-week period it was in the field.

Citizen Volunteers

For I-90 snowtracking this year, we were able to cover the same number of transects as in previous years, even with a smaller number of leaders (9, down from last year's 12) and team members (37, down from last year's 55). A total of 46 volunteers contributed 1,277 volunteer hours (Table 3).

Table 3. Summary of Volunteer Hours for the I-90
Snowtracking Project

Number of Transect Volunteers	46
Project Leadership Volunteer Hours	157
Transect Volunteer Hours	1120

For remote cameras this winter season, 20 volunteers installed cameras and maintained remote camera sites, contributing over 800 volunteer hours. Also, 21 of our program volunteers engaged in the pine marten surveys with the Cascades Carnivore

Connectivity Project (managed by the Western Transportation Institute), devoting a total of 504 hours of volunteer service.

In total, 84 volunteers (3 overlapped between tracking and camera teams) from our Citizen Wildlife Monitoring Project's complete winter season contributed 2581 hours

DISCUSSION

I-90 Snow Tracking

Results from the winter of 2011-2012 transects along the I-90 Snoqualmie Pass East Project are similar to our findings from the winter of 2010-2011 and suggest that the reliability of the data being collected by our team leaders is high. As with last year, biologists validating the findings of volunteer monitors found it most difficult to positively identify tracks identified as coyotes in the field. That's because some breeds of domestic dogs leave tracks very similar to those of coyotes. While team leaders in the field may be able to use contextual clues and/or clues collected from a long stretch of trail to make their diagnosis, distinguishing coyote tracks from those made by domestic dogs based solely on photographs of a single paw print, or a few sets of snow tracks, is at times impossible.

Coyotes are not a species of concern for conservation. But because coyotes are the most commonly identified animal on transects, they help us refine and test accuracy of wildlife methods and identification. In the 2012-2013 field season we plan to use methods to assess observer reliability in regards to distinguishing between coyotes and domestic dogs. Amended photo protocols that ask for written notes and contextual clues nearby are important to include.

Remote Cameras

2011-2012 marked an expansion of our winter remote camera monitoring season into the overall year's field operations and data management. In the past, cameras during the winter were largely dedicated to detecting wolverine in strategic locations and only experimented once in one location with detecting grey wolf presence. This

season continued our work with wolverines, while updating our approach to those stations with the installations of run pole stations. It also expanded our winter efforts targeting grey wolf. For access and comfort, winter is a hard time for monitoring: storms, snowpacks, road closures all make monitoring more difficult. Yet for some target species, like wolverines and wolves, snowpacks also make tracking and luring easier. Winter is also a time when we want to learn more about the habitats and distribution of other species, like gray wolves. Wintertime monitoring also allows us to engage an eager volunteer force year-round. Winter monitoring is a good complement to our larger, summer-fall remote camera program.

Our most significant result this season was documentation of a wolverine and collection of hair samples for DNA analysis in the Chiwaukum Mountains. This individual wolverine, later identified as a female and nicknamed Peg, was the first wolverine documented by photo and hair snag south of Highway 2 in decades, minus photo documentation of a wolverine in the Mount Adams area several years previous.

After the first images were shared with agency biologists our program volunteer along with Forest Service staff biologists reconfigured the camera site using a run pole bait station to improve wolverine ID. Bait hung from a run pole is placed near a tree; the animal climbs the tree and as it reaches up and out for the bait, exposes its underbelly to a neatly positioned remote camera. In this way, researchers capture images of the chest blazes unique to each wolverine. They also are better able to sex the animal. This successful reconfiguration will now be included as a standard technique in future wolverine monitoring efforts; and this particular station will continue into our summer-fall remote camera program.

Throughout the 2011/2012 monitoring season we: expanded our field knowledge of the central cascades and surrounding areas, helped our volunteers better ID potential movement corridors for wolves in Central WA, added to our knowledge of wolverine movements between the North and Central Cascades, and trained several volunteers in the construction of a run pole bait station for wolverine monitoring.

Citizen Science

With this season's I-go snowtracking effort, the Citizen Wildlife Monitoring Project now has under its belt six years of successful citizen science for wildlife monitoring in our state. Using leadership teams composed of trained, dedicated volunteers helped along with a small amount of paid staff time is an efficient and highly effective way to monitor wildlife. It's a great formula: highly trained team leaders mentor newer, entry level volunteers. Together they maintain quality in data collection while providing excellent educational experiences and recruiting future new team leaders.

Snowtracking and remote camera monitoring engages citizen scientists to help federal and state land and wildlife agencies monitor sensitive species such as wolverines and wolves. Volunteers contribute hundreds of hours of research benefitting agencies and non-profit partner group efforts throughout the state. In particular, the monitoring of wolf packs and target new habitat where packs could expand has proven invaluable to cash-strapped agency budgets. Agency wildlife biologists often cannot devote resources to exploring and monitoring new areas of potential wolf colonization. It was a volunteer-placed camera that this year garnered documentation of a new wolverine in Washington, a case in point for the value the Citizen Wildlife Monitoring Project adds to state wildlife conservation efforts.

RECOMMENDATIONS FOR NEXT FIELD SEASON

I-go Snow Tracking

1. *Field Data Collection Devices:* The hand-held computers the project uses for data collection are dated and in need of replacement. Poor GPS signal reception and crashes led to the loss of data on several transects, an increased work load, and a decreased sense of satisfaction for several team leaders. To deal with this issue, team leaders were assigned independent GPS units but several found the amount of training provided on how to use these insufficient. We suggest resolving this issue through purchase of new units and/or a more thorough training in using existing

2. *Routefinding*: Despite continued efforts to keep all transects well flagged, some transects remained difficult to follow in parts. Along with continued flagging efforts, providing team leaders with routes programmed into GPS units could provide another resource for dealing with route-finding issues on the transects.
3. *Field Guides*: For the next field season, we plan to print more copies of our weatherproof field guides to the study areas.

Remote Camera

1. Continue Winter Remote Camera Monitoring as a formal part of our Citizen Wildlife Monitoring Project, with focus on detecting target species movement during winter months and in previously undocumented areas
2. Provide additional resources and training to volunteers on proper winter travel, navigation, and nuanced methods of monitoring during winter months.
3. Provide Tracking Rulers to remote camera volunteers for more consistent documentation of tracks in and near camera sites.
4. Install run-pole bait stations at all remote camera stations targeting wolverine. Provide training and other needed materials to volunteers prior to the field season on this approach and rationale.
5. Connect volunteers with agency biologists for more direct communication and sharing of knowledge.

ACKNOWLEDGEMENTS

Once again, Mallory Clarke's dauntless effort contributed to all aspects of another successful winter field season of track transects. Similarly, once again, Adam Martin spent many hours preparing and implementing the field season as part of the project leadership and carried out GIS and data analysis of this season's data for this report.

Marcus Reynerson took time out of his busy schedule to evaluate observer reliability photographs. Our volunteer team leaders are the backbone of the project. Thanks to our returning team leaders: Joe Kiegel, Brian Booth, David Snair, Thomas Murphy, Jonathan Goff, Mallory Clarke, Adam Martin. Welcome and thanks to our two new team leaders: Michelle M. Peziol and Eli Loomis. We hope to see you again next year!

Thank you to all of the transect volunteers who participated in this years I-90 snowtracking field work: Aaron Crow, Amy Bogaard, Anders Kvarnberg, Ayako Okuyama-Donofree, Cathy Gaylord, Chad, Chris Bailey, David Beckman, Denise McElhinney, Drew Gaylord, Cathy Gaylord, Erin Ryan, Gail Tamura, Georgia Ray, Hugh Rand, Jay Friedman, Jennifer Coe, Jennifer Riker, Jennifer Van, John Duffy, Katie Remine, Kathryn True, Laura Seasholes, Lorelee Strength, Mathew Zoba, Maureen Corlas, Michael Donofree, Michael Stringfellow, Mike Holman, Mike Pagan, Nicole Ryan, Oliver Ludlow, Paul Zoba, Reed Riker, Shannon Schelinder, Tom Stonehocker, Tricia Enfield, Yinghua Zahng, Guthrie Schrengohst, Melissa Reitz, Emil Babik, Matthew Miller, Jim Clark, Sean Den Adel, Tana Kaiser.

Our volunteers who focused their efforts on wolverine monitoring throughout the winter went the extra mile in learning how to build run pole bait stations. Sean Den Adel and Tana Kaiser installed and maintained a site in the Mount Baker area and Jim Clark installed and maintained cameras and run pole stations in the Chiwaukum mountains. A special thanks to the employees of Scottish Lakes High Camp for their assistance with transportation to our remote camera sites.

The 2012 Central Washington winter wolf camera volunteers deserve a special thanks for exploring geographies in the state that the CCWMP program had little prior experience placing camera sites. Those volunteers included Tom Stonehocker, Guthrie Schrengohst, Melissa Reitz, Emil Babik, Matthew Miller, Drew and Cathy Gaylord, and Dave Werntz.

Thank you to the Advisory Council and site-specific advisors to our Citizen Wildlife Monitoring Project, who help guide and provide oversight for our work: Keith Aubry (US Forest Service - PNW Research Lab), Paul Balle (Woodland Park Zoo), Roger

Christopherson (North Cascades National Park), Scott Fitkin (WA Dept. of Fish & Wildlife), Bill Gaines (Conservation Science Institute), Patty Garvey-Darda (Okanogan-Wenatchee National Forest), Gregg Kurz (US Fish and Wildlife Service), Robert Long (Western Transportation Institute), Andrea Lyons (Okanogan-Wenatchee National Forest), Kelly McAllister (WA Dept of Transportation), William Moore (WA Dept of Fish and Wildlife), Jesse Plumage (Mount Baker Snoqualmie National Forest), Cathy Raley (US Forest Service - PNW Research Lab), Jo Richards (Okanogan-Wenatchee National Forest), John Rohrer (Okanogan-Wenatchee National Forest), Aja Woodrow (Okanogan-Wenatchee National Forest), Don Youkey (Okanogan-Wenatchee National Forest).

Financial support for the 2011-2012 program was provided by Washington Department of Fish and Wildlife's ALEA grant program, Puget Sound Energy, Tulalip Tribe Charitable Fund, and the Wilburforce Foundation. We truly appreciate this support to keep our volunteer teams equipped, trained, and assisted with their travels. Thank you once again to the North Bend Starbucks Lobby Store #3216, the store manager, Linda Porreca, and all of the employees of the store, for providing continued use of closet space to store our field equipment during the winter field season, providing a meeting location, and appropriately caffeinating our data collectors.

Appendix A: Photo Highlights from 2011/2012 Winter Monitoring Season



Photo A-1. Bull elk at lower Reecer Creek early January 2012



Photo A-2. Cougar makes a night time visit to Teanaway camera in early Dec 2011



Photo A-3. Black bear visits the Teanaway area in early spring, March 2012



Photo A-4. American marten visits Mt. Baker site in the dead of winter, Feb 2012



Photo A-5. Wolverine captured on remote camera in Chiwaukum Mountains – first

documentation of a wolverine south of Highway 2 in decades. Conservation Northwest



PhotoA-6. View of chest blazes on our newest wolverine as she stares at a run pole bait station at Chiwaukum camera site. Conservation Northwest



Photo A- 7. Black bear with small cubs visiting our Chiwaukum site. Conservation Northwest



Photo A- 8. Run pole bait station being set up by a volunteer. The volunteer is preparing to hang bait that will tempt the wolverine to walk the plank allowing camera views of its chest. Jim Clark



Photo A- 9. Complete run pole set up in the Chiwaukum mountains. Jim Clark

Appendix B: Maps of our remote camera stations

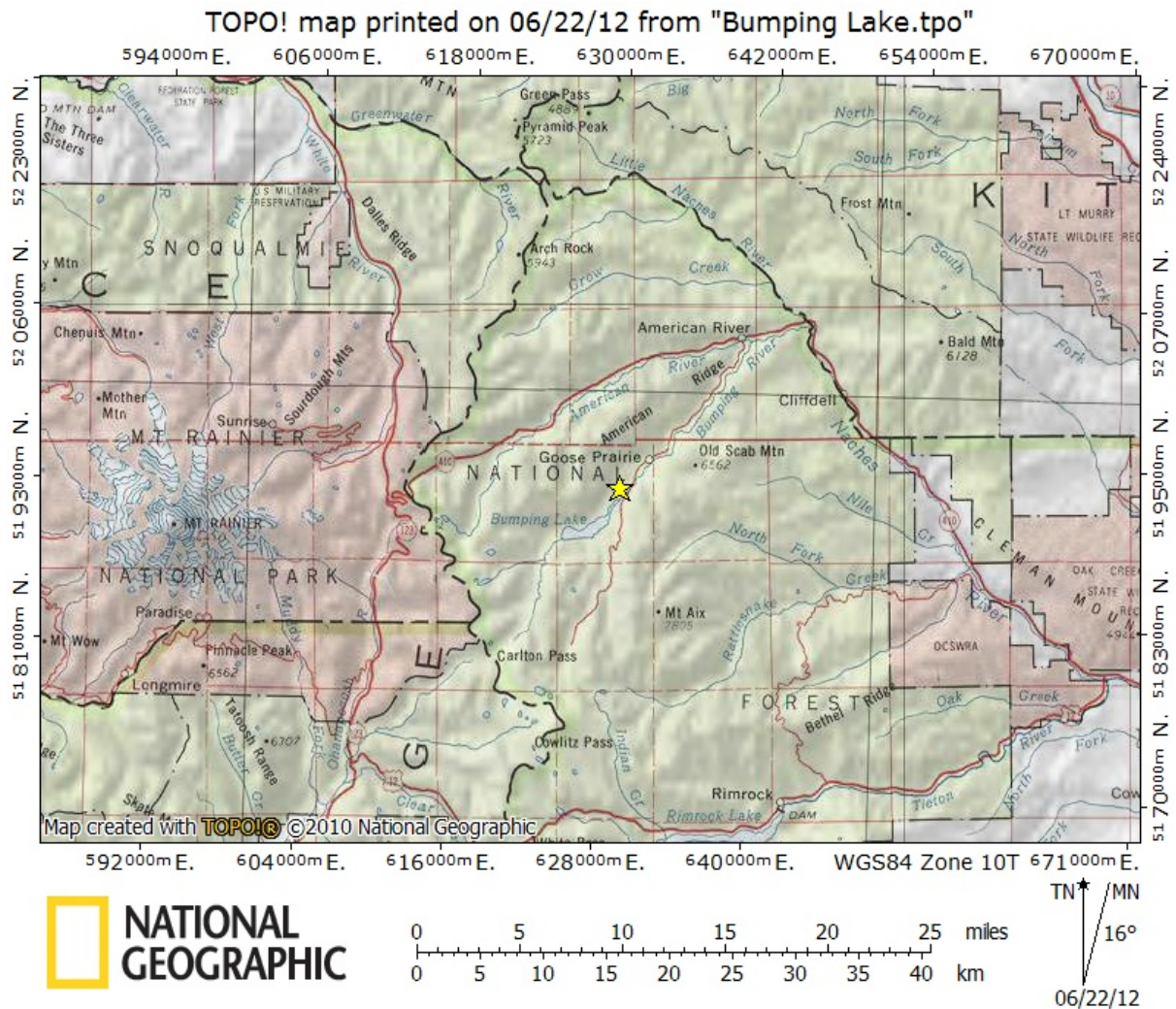


Figure B-1. Bumping Lake Camera Site (1 camera)

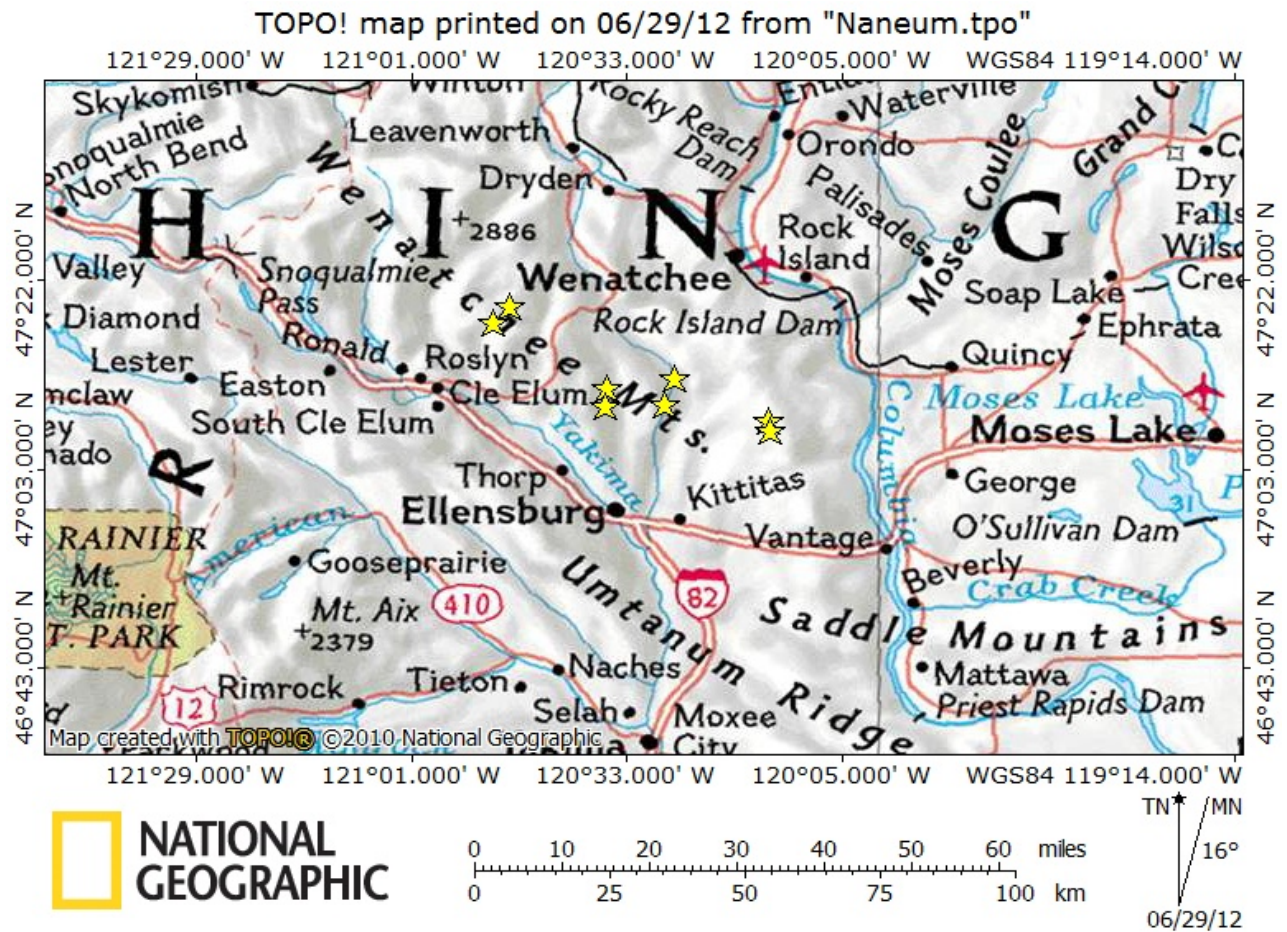


Figure B-2. (From left to right, 2 star clusters = 1 location) Teanaway, Reecer Creek, Naneum Creek, Quilomene Camera Sites (total of 8 cameras in 4 sites)

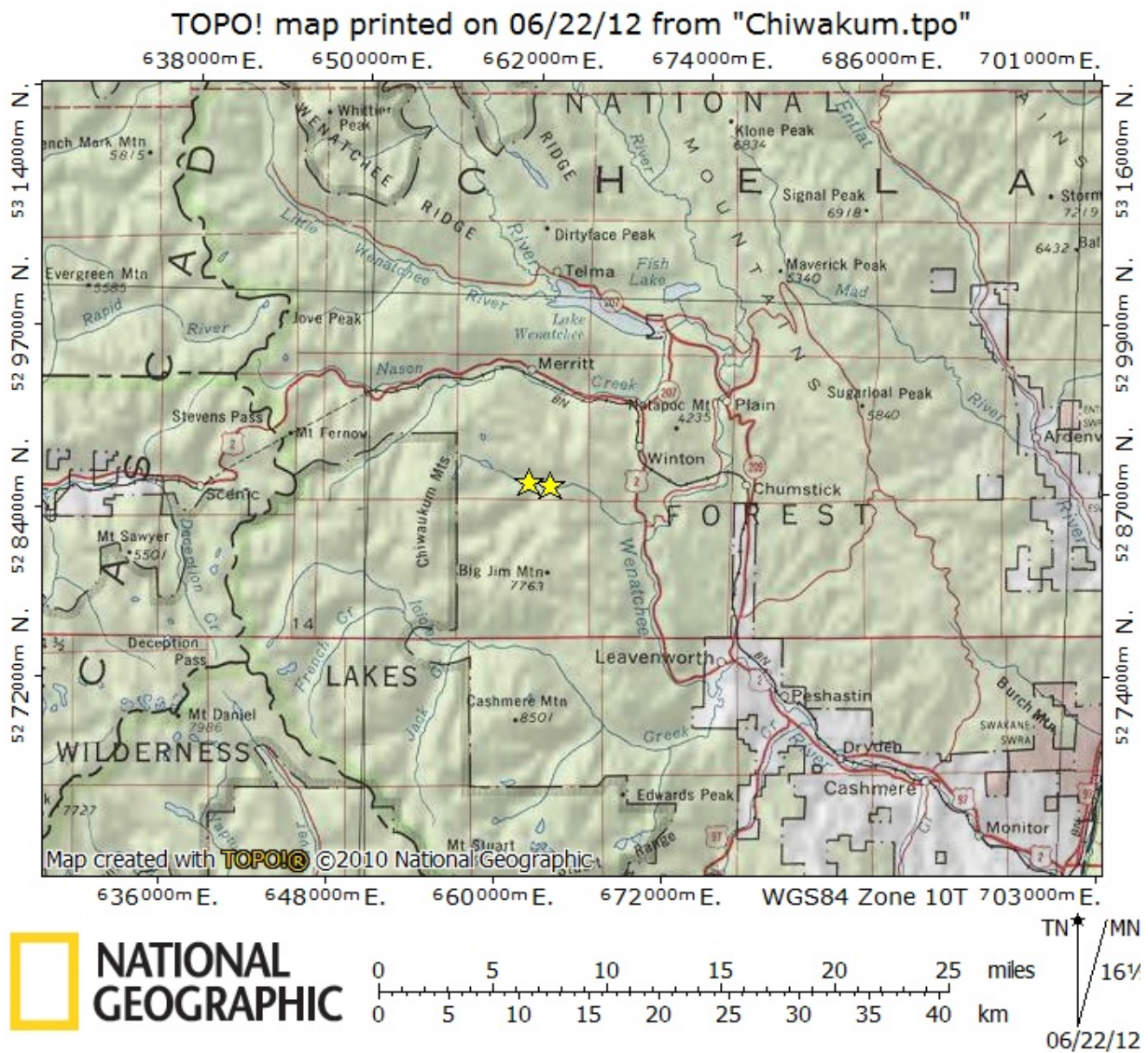


Figure B-3. Chiwaukum Camera Sites (2 cameras)

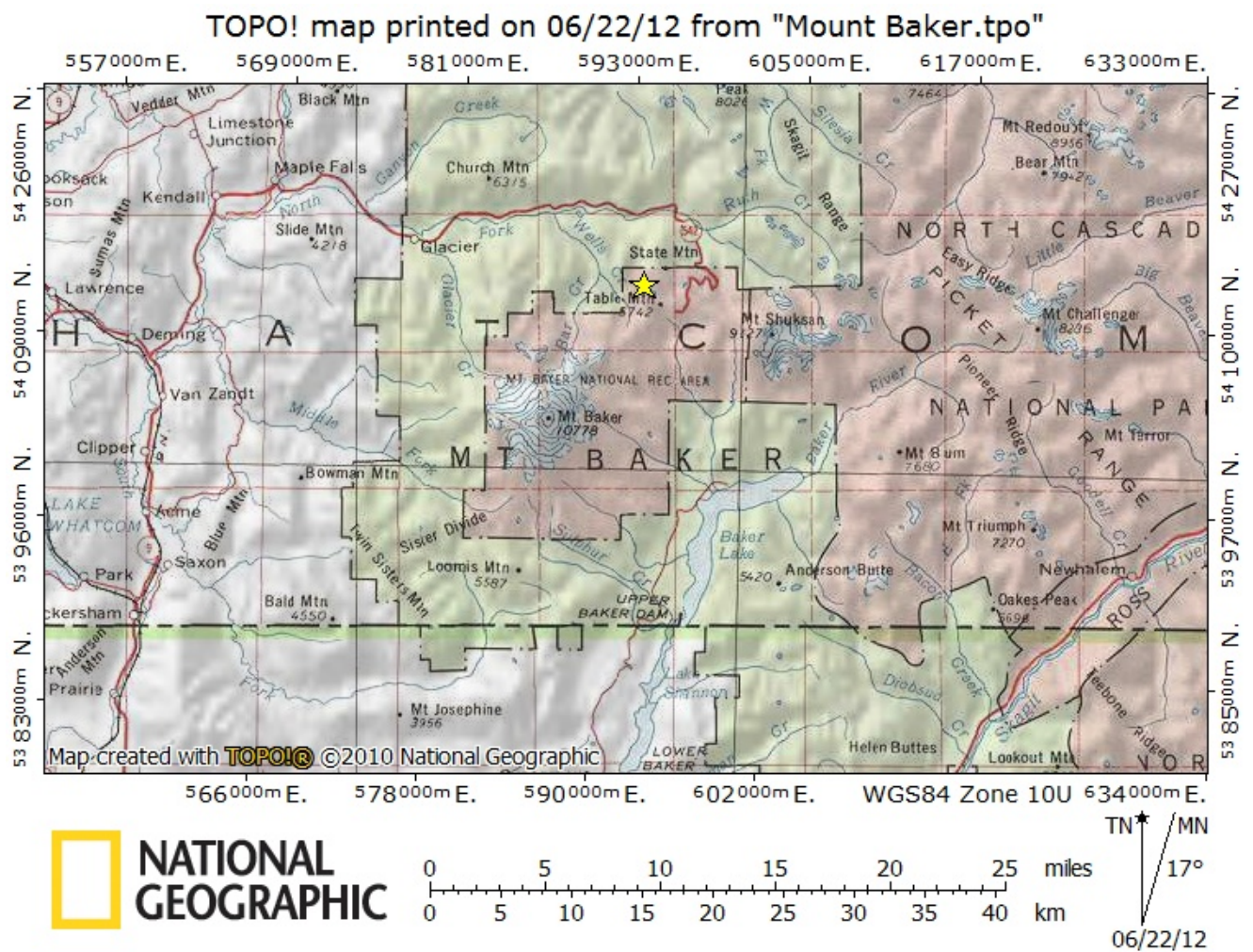


Figure B-4. Mount Baker Camera Site (1 camera)

Appendix C: Project Species Priority List

Tracking priority for this study in descending order

Level 1

Wolverine
Fisher
Lynx
Wolf
Grizzly Bear

Level 2

Cougar*
Marten
Mountain Goat
Elk
Mule Deer
Mountain Red Fox/Cascades Red Fox

Level 3

Black bear
Bobcat
Coyote
Raccoon
Snowshoe hare and smaller animals—do not record

KEY

Level 1 species are rare or threatened and endangered species in the Cascades and/or Washington. Evidence, sightings or photographs of any of these species should be immediately reported to Conservation Northwest per the Communications Protocol.

Level 2 species, although not T&E, these species are rare or sensitive in some locations or of special interest to the project. Please report sightings of these animals (except deer and elk, which are categorized as Level 2 due to their abundance and interest to the I-90 project)

***Cougar although not Level 1 are noteworthy in the I-90 corridor due to relation to other projects**

Level 3 species are more common throughout the project areas, and thus lower priority in terms of communication of their presence