

## 2020 Cascades Wolverine Project Progress Report

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### Introduction

Based in the Methow Valley of North Central Washington, Cascades Wolverine Project aims to support wolverine recovery in the Cascade Mountains through monitoring, community science, and storytelling. The field team includes photographer and field biologist David Moskowitz, field biologist and mountain guide Steph Williams, and field scientist and mountain guide Drew Lovell along with many skilled volunteers. We work in collaboration with Conservation Northwest (CNW), Cascades Carnivore Project, Woodland Park Zoo, the U. S. Forest Service (USFS), and Washington Department of Fish & Wildlife (WDFW). Funding has been provided by Patagonia's Environmental Programs Department in addition to private and corporate match donations.

### Methods

#### Objective 1: Monitoring

**Monitoring area** – We installed remote-camera stations within the eastern portion of the North Cascades Ecoregion, specifically in the Chelan and Methow watersheds of Okanogan-Wenatchee National Forest. In collaboration with John Rohrer (USFS), and Scott Fitkin (WDFW) we chose specific drainages based on findings of the North Cascades Wolverine Study (2005-2015), and current efforts by Woodland Park Zoo Senior Conservation Scientist Dr. Robert Long with North Cascades Wolverine Project (2013-present.) We targeted areas where wolverines are known to occur, but currently lack winter monitoring. All sites fell within the bioclimatic envelope as described by Copeland, et al. (2010), and were accessible within a day by snowmobile and ski from the Methow Valley, or the village of Holden.

**Methods** – We installed and maintained twelve remote-camera stations baited with Gusto scent lure (a skunk and beaver castor-based attractant), as well as parts of road-kill deer. Six stations (Early Winters-2017-3, Early Winters-2017-2, Holden-2019-3, Holden-2019-2, Holden-2020-1, Holden-2020-2) included motion-triggered DSLR cameras with supplemental flash lighting, in addition to motion-triggered trail cameras. Four stations (Harts Pass-2020-1, Harts Pass-2020-2, Twisp River-2020-1, Silver Star-2019-1) did not include a DSLR camera-trap. We suspended bait two to three meters above the snow surface by cable strung between trees at all stations except Silver Star-2019-1, Holden-2020-2, Holden-2020-1, Harts Pass-2020-1, and Harts Pass-2020-2 where bait was attached directly to a tree and above the snow surface.

We maintained stations every three to four weeks between January and April 2020, with the exception of Harts Pass-2020-1, Harts Pass-2020-2, Twisp River-2020-1, and Silver Star-2019-1, most of which were deployed for a longer period and all of which were unmaintained between installation and removal. In addition to CWP's stations, we facilitated maintenance of the Holden Village station that is part of Conservation Northwest's Citizen Wildlife Monitoring Program (CWMP), as well as two camera stations for CNW near Easy Pass. We entered data and photo-captures into the CWMP database, and sent field updates directly to biologists Cathy Raley, John Rohrer, and Scott Fitkin.

## Objective 2: Community Science

**Monitoring Area:** Washington Cascades and beyond.

**Methods:** Through regional and national news, social media, our website, public events, project partners, and personal correspondence, we gathered public observations of wolverines and other rare wildlife. This information was evaluated for accuracy and catalogued along with track observations made directly by project members over the course of winter field work.

## Objective 3: Conservation Messaging

A third objective of CWP is to create and disseminate engaging visual content and narratives designed to engage and educate the public about wolverine conservation on a regional and national scale. Photographs and "stories from the field" are shared via social media and partner organizations. CWP also contributes images to journalism and invites media coverage of wolverine conservation.

## **Results**

### Objective 1: Monitoring review

Of twelve stations, three detected wolverines, two detected lynx (*Lynx canadensis*), and two detected fishers (*Martes pennanti*). Five stations detected no rare wildlife. One station, Harts Pass, failed to collect any data due to a dysfunctional camera. Based on photographs of pelage patterns, detections at the two Fisher Basin cameras were likely the same animal. Based on clear chest blaze patterns, the Holden 2019-3 station detected multiple visits from an individual wolverine, but it is not clear that all of the station's detections were of the same individual.

*Incidental observations of increased off highway snowmobile use of wolverine habitat:* over the past three field seasons we have observed what appears to be an increase in off-highway snowmobile use, specifically in the high elevation valley south of the hairpin turn on Highway 20 east of Washington Pass. CWP does not currently have a protocol to record and track recreational intensity.



*Photo 1. Off highway snowmobile tracks in the Highway 20 corridor near a multi-year wolverine monitoring station location. Photographed by David Moskowitz, March 16, 2020.*

Table 1. 2019-2020 CWP Wolverine and rare species detection events across all stations

	<b>Camera Station ID</b>	<b>Installed</b>	<b>Removed</b>	<b>Altitude (m)</b>	<b>Wolverine</b>	<b>Lynx</b>	<b>Fisher</b>
<i>1</i>	Harts Pass-2020-2	1/5/20	6/5/20	1661	-	1	-
<i>2</i>	Fisher Basin-2019-2	10/16/19	9/20/20	2012	2	-	-
<i>3</i>	Fisher Basin-2019-1	10/16/19	9/20/20	1608	2	-	-
<i>4</i>	Early Winters-2017-3	1/3/20	5/23/20	1738	-	-	-
<i>5</i>	Early Winters-2017-2	1/3/20	5/22/20	1146	-	1	-
<i>6</i>	Silver Star-2019-1	1/4/20	4/18/20	1463	-	-	-
<i>7</i>	Twisp River-2020-1	1/11/20	6/5/20	1082	-	-	1
<i>8</i>	*Holden-2020-1	1/7/20	2/4/20	1164	-	-	-
<i>9</i>	*Holden-2020-2	2/4/20	4/5/20	1106	-	-	-
<i>10</i>	Holden-2019-3	1/7/20	4/5/20	1120	5	-	1
<i>11</i>	Holden-2019-2	1/6/20	4/15/20	1284	-	-	-

\*In February, Holden-2020-1 was moved one kilometer north to a new location labeled Holden-2020-2 due to the difficulties anticipated accessing the site during spring.

Table 2. 2019-2020 Wolverine and rare species detection events in chronological order.

	<b>Date</b>	<b>Station ID</b>	<b>Species</b>
<i>1</i>	10/23/2019	Fisher Basin-2019-2	Wolverine
<i>2</i>	10/23/2019	Fisher Basin-2019-1	Wolverine
<i>3</i>	1/20/2020	Holden-2019-3	Wolverine
<i>4</i>	1/20/2020	Holden-2019-3	Wolverine
<i>5</i>	1/20/2020	Holden-2019-3	Wolverine
<i>6</i>	2/13/2020	Holden-2019-3	Wolverine
<i>7</i>	2/23/2020	Fisher Basin-2019-2	Wolverine
<i>8</i>	3/6/2020	Holden-2019-3	Fisher
<i>9</i>	3/8/2020	Early Winters-2017-4	Lynx
<i>10</i>	3/9/2020	Twisp River-2020-1	Fisher
<i>11</i>	3/15/2020	Holden-2019-3	Wolverine
<i>12</i>	4/19/2020	Harts Pass-2020-2	Lynx
<i>13</i>	6/8/2020	Fisher Basin-2019-1	Wolverine

Note: Multiple events are listed as a single event wherever photo-captures occurred within one hour.

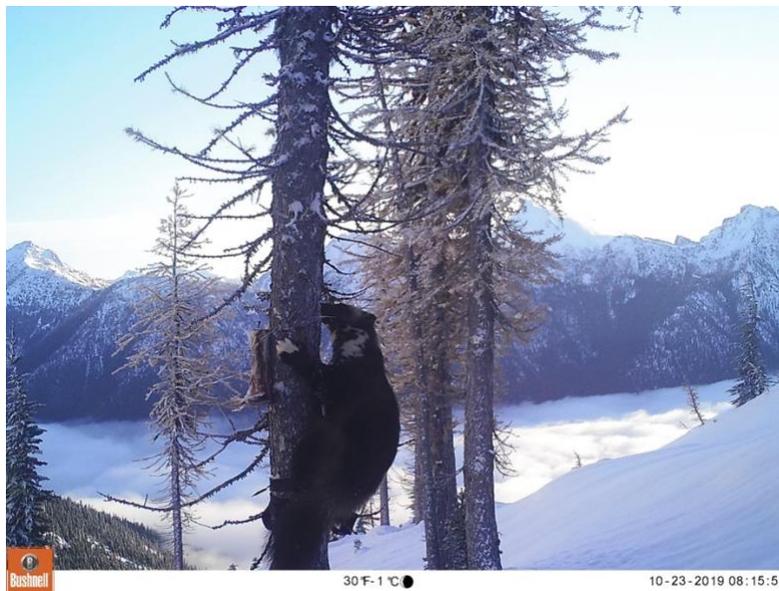


Photo 2. Wolverine photographed at a research station set up with Conservation Northwest.



Photo 3. Canada lynx detected at a research station in the Methow watershed.

### Objective 2: Community science review

The 2019-2020 field season saw a significant increase in the number of observations submitted by the public of animal tracks and direct encounters with wildlife. See Appendix 1 for maps of community science engagement and examples of public observations. Table 3 summarizes public observations submitted per year, including verifiable sightings. The majority of observations have been animal tracks. We are currently developing and testing a method for classifying track observations for likelihood of identifiability.

Table 3. Community science effort: public incidental wildlife observations received per year

Year	No. of observations	Verifiable sightings*		Region
		Wolverine	Cascade red fox	
2017-2018	12	1		NCE
2018-2019	26	3		NCE
2019-2020	92	9	2	NCE & SCE
<b>Total</b>	<b>130</b>	<b>13</b>	<b>2</b>	

\*These include diagnostic photographs or videos of animals. Track observations are not included.

### Objective 3: Conservation messaging review

During the 2019-2020 season we increased the profile of wolverine ecology and conservation through a variety of public and private talks, a growing social media presence, and publication of

interviews and photographs from the project in a variety of digital and print media. Photography from the winter season can be viewed in Appendix 2.

Additionally, we supported the production of a film about wolverine conservation and our work in this field. A teaser for this film (scheduled for release in the year 2021) was released in December 2019 and can be viewed at: <https://cascadeswolverineproject.org/film-teaser/>.

Table 4. Annual summary of public outreach

Talks	<ol style="list-style-type: none"> <li>1. 9/2019 Patagonia Ballard, WA event (venue’s record attendance and donations)</li> <li>2. 12/2019 Wenatchee River Institute, Leavenworth (record attendance)</li> <li>3. 1/2020 Holden Village</li> <li>4. 3/2020 Holden Village</li> <li>5. 2/2020 Methow Valley Elementary School</li> <li>6. 2/2020 North Cascade Heli guide training for wolverine sightings</li> </ol>
Media: print, podcast, and online	<ol style="list-style-type: none"> <li>7. <i>The Holden Village Podcast</i>, January 2020 “Cascades Wolverine Project”</li> <li>8. <i>Seattle Times</i>, January 2020 “Bringing back the spirit animal of the backcountry”</li> <li>9. Washington Dept. of Fish &amp; Wildlife species report, Feb 2020, photographs</li> <li>10. <i>Sierra Magazine</i>, August 2020 “Tracking wolverines in the Cascades”</li> <li>11. <i>USAToday.com</i>, August 2020, “Wolverines Return to Mt. Rainier National Park”</li> <li>12. <i>CNN.com</i>, August 2020, “Wolverines Return to Mt. Rainier National Park”</li> </ol>

## Discussion

2019-2020 was unique in numerous aspects, not the least of which was the outbreak of the COVID-19 global pandemic. To our great relief, the pandemic did not impact our monitoring, as we were able to leave stations out during statewide travel restrictions. Furthermore, the pandemic likely contributed to the increase in public incidental wildlife observations we received due to the surge in outdoor recreation seen nationwide across public lands.

Last year we had several other notable ‘firsts.’ Camera stations detected lynx and fisher for the first time. In contrast, for the first time we did not pick up any wolverines within the Early Winters watershed along Highway 20. We also noticed what we believe to be a substantial uptick in off-highway snowmobiling in the Early Winters watershed last year. Whether or not the increase in motorized recreation correlates to a decrease in wolverine presence remains a question. Moving forward, we intend to begin investigating the relationship of recreation and wolverine habitat in the study area.

Another first for the project was receiving a series of videos submitted to us via the community science program of three wolverines together at Mt. Rainier National Park. These animals were identified as the individual nicknamed Joni, and her two kits currently being monitored by Dr. Jocelyn Akins of Cascades Carnivore Project. Joni is the first breeding female wolverine documented at Mt. Rainier National Park in approximately a century. Several other wolverine photos and videos streamed in from the public via our website over the 2020 summer season.

Photographic evidence of wolverine encounters is a criterion for verifiable sightings according to the USFS Pacific Northwest Research Station. However, the majority of public observations we have collected thus far have been of animal tracks, some of which were identifiably wolverine tracks and therefore valuable to research and conservation. Continuing to develop and test CWP's track identification reliability method has the potential to yield a substantial amount of incidental wolverine observations and provide insight into wolverine habitat use and its overlap with human recreational activities.

Lastly, we had our first major media coverage across several national news outlets, including a burst of attention following the extraordinary story of wolverines at Mt. Rainier National Park, spearheaded by Cascades Carnivore Project and the National Park Service. CWP dovetailed the community science program with CCP's research program resulting in excellent outcomes for public awareness and engagement. Collaborative partnerships such as this are more important than ever in light of the Fish & Wildlife Service's recent withdrawal for federal protection of wolverines.

The October 2020 FWS decision means that a nationally coordinated and consistent approach to wolverine conservation is not likely in the near future. Yet wolverine research, monitoring, and conservation remains essential to their long-term survival given the projected combined impacts of reduced spring snow and increasing pressure from human land use, specifically roads and recreation. The challenge we see to the future of wolverine conservation in the Cascades is to act well in advance of anticipated stressors in order for the species to recover and adapt to a warmer world. Without continuous committed effort to better understand wolverines, critical habitat, best practices for recreation, and action to reduce the worst impacts of the climate emergency, we may unwittingly reverse the current positive trend in wolverine recovery.

## **Acknowledgments**

Cascades Wolverine Project is a grassroots effort made possible by generous support from volunteers, contributors, collaborators, and partners in the North Cascades Ecoregion and beyond. Our study area on the eastern slopes of the North Cascades falls within the traditional territories of several indigenous peoples, most prominently the Methow and Chelan tribes, both members of the Colville Confederated Tribes. These people stewarded the region for hundreds of generations until they were forcibly removed from their homeland in the late 1800's. We are truly grateful to have the opportunity to work within these amazing lands.

We are grateful to colleagues and partners in wildlife management, research, and conservation: Conservation Northwest, US Forest Service, Washington Department of Fish and Wildlife, Woodland Park Zoo, and Cascades Carnivore Project. We are honored to have collaborated on art, media, and maps with Hannah Vianno, Jessica Campbell, Wild Confluence Media, the Wilder Studio, Marty Schnure, Darcy Chenoweth, Yeti Prints, and Recap Hats. Jesse Snyder designed our website and has been an indispensable and highly skilled volunteer. Peter Lambert's assistance with social media has been invaluable. Thanks to certified Track and Sign Specialists Marcus Reynerson, and Brian McConnell for their expert track review, and to community scientists who offered their observations.

A hardy, fun, and dedicated team of field volunteers made last winter's monitoring a success: Mike Boeing, Erica Engle, Liza Bee Hodgins, Lexie Hunsaker, Peter Loft, Nick March, Jack McLeod, and Marc & Nancy Rerucha Borges. Thanks to Methow locals who lent machines of various sorts that delivered field crew and gear into the mountains: Steph Bennett, Paul Butler, Larry Goldie, North Cascade Heli, and North Cascade Mountain Guides. Thanks to Steve Kunnen for continued help and encouragement. Thank you to Payten Kaufman who assisted with the community science program while completing her sophomore project at Liberty Bell High School, and Katharine Bill who advised Payten and the rest of the CWP team in numerous ways. Thank you to event hosts: Patagonia Ballard, Wenatchee River Institute, Holden Village, and Methow Conservancy. Many thanks to the incredible staff at Holden Village for housing and feeding us deep in the rugged Cascades.

To CWP's major donors we offer sincere gratitude: the Shane Caskey Household, Ellen Haas, Anne & Jon Fox in memory of Mary Kiesau, Christine Roux, Pam Hawes, an anonymous donor, Boeing, and Patagonia. Private donations carried us through this past year in particular—we could not have done our work without a supportive community of individuals: Karl Berg, Jessica Hewitt, Mary Williams, Peter Loft, Kathleen Lovell, Dave Clark, Joshua Lancaster, Christopher Pelkey, Mark Timken, Brendan Hayward, Dongmei Chen, Shawn Behling, T. Stephen Jones, Jackson Riley, Chuck Bauman, Perry Edwards, Everett Household, Parker Household, Wyatt Household, Bernard Ryan, Beth Winkler, Drummond Household, Johnson Household, Alyssa Lovell & Alison Perlo, Johnson Household, Jouard

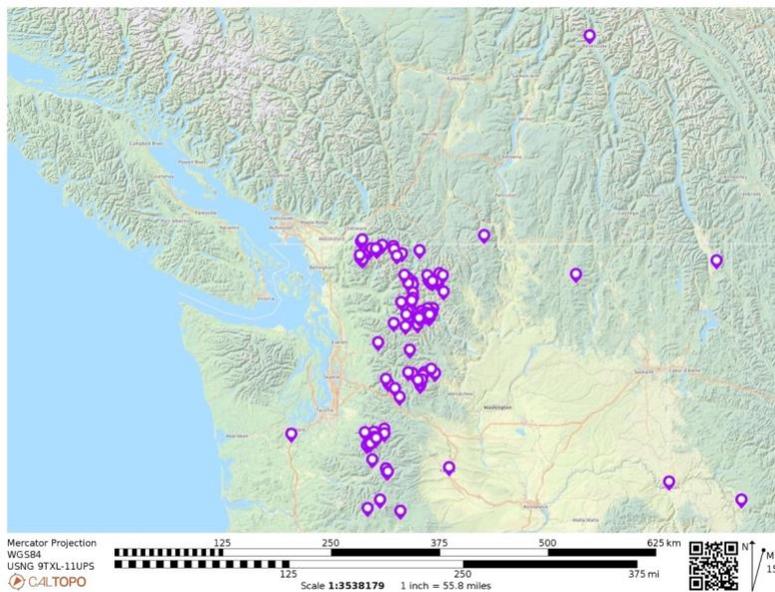
Household, Carrasco Household, Pete & Deanna Jenkins, Smytheman Household, Wagonfield Household, Fink Household, Nourse Household, Peter & Debra Loft, Michael Household, Buer and Williams Household, Vallarino Household, Adrienne & John Schaefer, Claire Waichler, Rittman Household, Rebecca Ryan, Econopouly Household, Hayward Household, Boese Household, Larson Household, Burke Household, Janet Parker, Alison & Fiona Naney, Goldsworthy & Hurd Household, Jacobson Household, Erckmann Household, Foster Household, the Ciske Household, and several anonymous donors. We regret if we missed the names of people that buoyed the project throughout the year. To each and every one supporting CWP, thank you!

## Appendix 1: Community science program

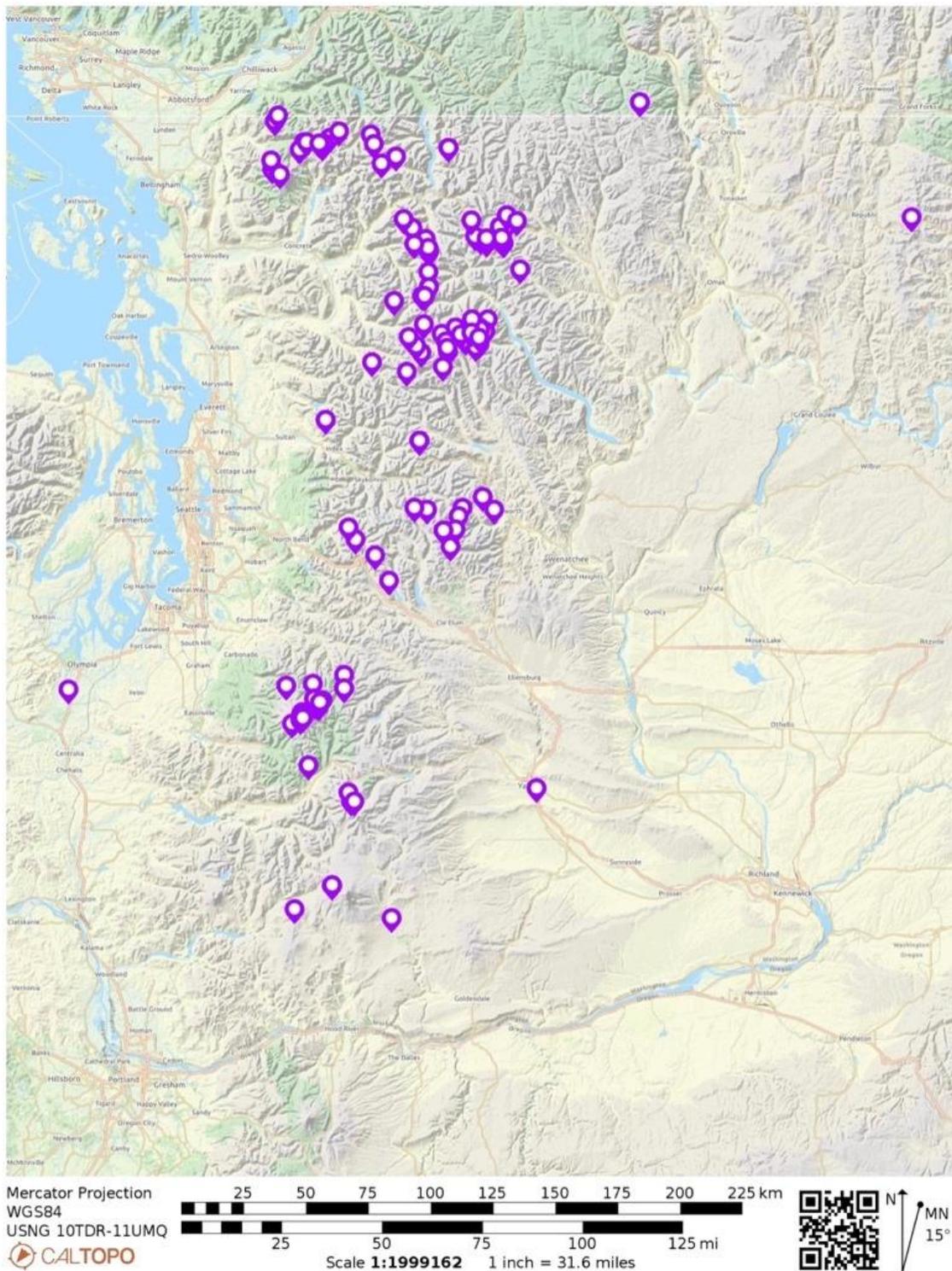
Example 1. Public observations: photograph of wolverine in South Cascades Ecoregion by Arthur Rallu, track photos in the North Cascades Ecoregion by Lee Yarbrough.



Map 1. Public incidental wildlife observations, submitted October 2017 – September 2020



Map 2. Public incidental wildlife observations in Washington State, submitted October 2017 – September 2020



## Appendix 2: Photography

All images by David Moskowitz. For an online gallery of images from the field season visit:

<https://cascadeswolverineproject.org/gallery/>



*Photo 4. Wolverine in the Chelan watershed inspecting a deer mandible.*



*Photo 5. The same individual displaying their chest blaze.*



*Photo 6. The chest blaze of this wolverine from a different event at the same station suggests this is a revisit from the same individual.*



*Photo 7. Fisher photographed in the Chelan watershed.*



*Photo 8. Golden eagle photographed in the Chelan watershed.*



*Photo 9. Pacific marten photographed in the Chelan watershed.*



*Photo 10. Project volunteer Lexie Hunsaker helps set up a camera station in the Methow watershed.*



*Photo 11. Steph Williams collecting genetic samples at a research station in the Chelan watershed.*



*Photo 12. Steph Williams and Drew Lovell cross paths with the trail of a marten during a field day with the project. Methow watershed.*