#### **Citizen Wildlife Monitoring Project**

# Wolverine Track and Sign Identification, Documentation, and Collection for Winter Backcountry Travelers

#### FIELD METHODS AND MATERIALS

#### **GOALS**

This document is designed to provide the tools necessary for novices to recognize, document and collect potential wolverine tracks and sign while pursuing winter outdoor activities in the mountains of the Pacific Northwest. Documentation and collected specimens of such sign can be analyzed out of the field by qualified personnel and help guide decisions about future efforts to document wolverines in the region through remote cameras, DNA sample collection, or further tracking efforts. Casual contributions of this manner support ongoing structured monitoring activities of the project.

#### **METHODS**

The following description of methods assumes the reader has discovered a set of tracks which he or she believes may have been made by a wolverine. A sheet with key features of wolverine tracks and trail patterns is included below. It is beyond the scope of this document to exhaustively cover techniques for finding and identifying such tracks. Trainings are available through CCWMP and Wilderness Awareness School (project partner).

#### Field Materials Needed

 1 teta materialis medica							
Paperwork:	Equipment: (NOT PROVIDED HERE)						
2 Target Species track		5 index cards					
datasheets		6" ruler					
2 Trailing datasheets		Notebook					
2 Target Species		Pencil					
specimen datasheets		permanent marker					
Wolverine Track		Camera					
Identification sheet		GPS unit					
Photo-documentation		4 quart sized ziplock bags					
guidelines		2 small brown paper bags					
Measurement guidelines		Topographic Map					
CCWMP contact		field guide to northwest wildlife					
information		tracks (recommended)					
		,					

#### **TRACKS**

### Procedure for Potential Target Species, Ambiguous or Unclear Tracks or Sign:

- 1) Select the clearest tracks for photographs (and measurements). Consider photographing tracks in a variety of locations if possible.
- 2) When ambiguous or unidentifiable tracks are found, the first step is to search the area for better tracks of the same animal. If there is a trail you can follow, this is one way you may discover clearer tracks for that individual. In general, look for where the creature has entered more sheltered areas away from direct sunlight, wind, further snowfall, or whatever has likely obscured the tracks.
- 3) If clearer identifiable tracks cannot be found, then ambiguous tracks, which could be wolverine, should be documented with care. Unclear tracks that are clearly NOT the target species do not need to be documented.
- 4) Photograph tracks, trail patterns, and other signs as per photo-documentation procedures below.

# **Photographic Documentation Procedure:** (see appendix for diagrams and further instructions)

General:

- Take multiple photographs to ensure you get a quality shot.
- Take at least one picture of the track that includes a card in the picture with:
  - o Date
  - Location
  - o Observer name.
  - o GPS coordinates (if available) and datum used (UTM NAD 83 preferred)

#### Individual tracks:

- Take photo looking directly down on track to reduce distortion.
- Include two scales, preferably rulers, one running lengthwise, the second widthwise. (Collapsible ski poles with cm calibrations showing also work) Track patterns, trails, other signs:
  - Include a scale of some sort. Often this may be leaving the scale you used for an individual track on the ground by that track (thus also giving a reference for where the individual track sits in the pattern).
  - Try to take picture looking straight down on trail to reduce distortion. If this is
    impossible due to size of trail, include scales both near and far to account for
    distortion.
  - Including a person in a photo can help with scale for larger frames.

#### **Sketches and Measurements Procedures (OPTIONAL/RECOMMENDED):**

Fill out the TARGET SPECIES DATASHEET as completely as possible. Attempt to make all drawings either life size or to scale (note what scale is). The more completely this sheet is filled out the more likely the information collected will be of use to the project. Use the "Measurement Guidelines" sheet, below, for determining what to measure in tracks and track patterns.

#### TRAILING AND SPECIMEN COLLECTION (OPTIONAL/RECOMMENDED)

Assuming time and safety permit, attempt to follow the animals trail in both directions for as long as possible. Trailing is carried out for two reasons:

- To collect more geographic information on the potential wolverine trail.
- To search for and collect specimens that can be used for DNA analysis (e.g. hairs or scats).

Collectable specimens include hairs and scats. Hairs may be collected out of individual tracks, beds in the snow, or from course objects the animal brushed against during its travels. Hairs are more difficult to detect than scats and require a high degree of attention to locate. This method is based on the methods described in Ulizio et al (2006). This study found hair samples on average within .49 km (.30 miles) while trailing likely wolverine tracks. The average distance between scat collections was 1.43 km (.88 miles).

Record trailing observations and UTM points on the TRAILING DATASHEET (see appendix). For any specimens collected, fill out the SPECIMIN DATASHEET.

#### **Trailing Procedure**

- 1.) Attempt to follow the trail for at least ½ mile (preferably ½ mile to increase likelihood of finding hair or scat sample, see below) in each direction from the point of discovery. Ideally the trail will be followed as far as possible to gather as much information about the animal as you can and to increase the likelihood of obtaining a specimin for DNA analysis.
- 2.) On the trailing datasheet, record any discernable behaviors, notable changes or characteristics of the trail.
- 3.) Record the path of the animal by documenting frequent UTM coordinates (obtained from your GPS unit or topographic map) with associated commentary in notes, where appropriate.

#### Searching for and collecting specimens:

4.) While trailing scan individual tracks and disturbed snow for sloughed hairs. When first starting this search take some time to study several tracks in detail from several angles to help develop your attention to the types of details that will help you notice

hairs. As you follow further along the trail looking for hairs you should be able to increase your speed and efficiency.

- 5.) Stop at any beds, lays or other disturbances in the snow to scan carefully for hairs. Of particular interest are beds where the animal laid long enough to allow snow to melt and then refreeze as these conditions often snag high quality hairs. Kneel or lie down with your eyes about 30 cm (12 inches) from the snow surface. Scan each bed from several different angles as hairs may pop out more clearly depending on lighting and background.
- 6.) Carefully look for hairs on any branches, tree bark or other material that the animal may have brushed against (either intentionally or unintentionally) on its travel route.
- 7.) Every effort should be made not to touch the hairs directly as this can contaminate them for DNA analysis. Ideally a sterilized tweezers would be used to extract the hair(s). Deposit the hairs in a coin envelop (included in field kits provided at trainings). Label the container clearly with the location, date, coordinates, and your name (observer). Fill out a specimen collection datasheet.

**NOTE:** In the event that a tweezers or paper envelope are not available to collect hairs, a clean ziplock bag can be used in the field for a short period of time. Plastic bags, which hold in moisture, can cause specimens to mold. As soon as possible transfer the hairs to a dry envelop and store it in a dry location until they can be delivered to one of the project managers (see below).

- 8.) Scats are relatively more easily located than hairs along trails, though less frequently occurring. If it will not be possible to keep a scat frozen it should be collected in a brown paper bag or transferred to one from a plastic bag once out of the field to reduce the chance of mold developing. As with hairs do not touch the specimen directly both to reduce chance of contamination as well as to prevent transmission of disease or parasite that may be present in the specimen to you. Label container and fill out datasheet clearly as above. Once out of the field either store the scat in a freezer to preserve it until it can be delivered to a project associate or allow to dry in a paper bag stored in a dry location.
- 9.) Once out of the field a project associate as soon as possible to arrange for delivery of specimens to an appropriate location for analysis (see below).

#### **OUT OF THE FIELD**

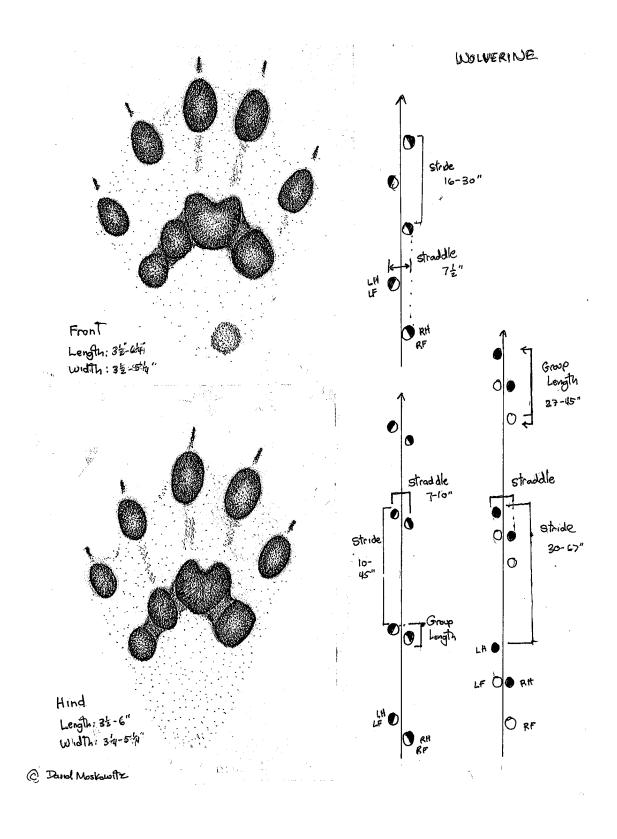
Once you come out of the field contact one of the individuals below for specific instructions on how to handle delivery of materials (paperwork, photographs, specimins). Immediate communication is highly valued as strong evidence may solicit a hasty follow up response in the area of discovery that might include setting up remote cameras, hair snags or follow up tracking surveys.

David Moskowitz (Wilderness Awareness School) 425 891 4745 davem@wildernessawareness.org

Jen Watkins (Conservation Northwest) 206 675 9747 x203 jwatkins@conservationnw.org

#### **Works Cited**

Ulizio, Todd J., John R. Squires, Daniel H. Pletscher, Michael K. Schwartz, James J. Claar, and Leonard F. Ruggiero. 2006. "The Efficacy of Obtaining Genetic-Based Identifications from Putative Wolverine Snow Tracks." <u>Wildlife Society Bulletin</u> 34(5):1326-1332.



## **SPECIMEN DATA SHEET**

	Observer	Date	Time		
	Geographic Location			_	
	UTM Coordinates: E	N		Zone	_ Datum
	Elevation				
	Time Since Last Snow (days or h	nours)			
	Snow Condition				
	Species:				
COM	MENTS				

#### CASCADE WILDLIFE MONITORING PROJECT TRACK MEASUREMENT GUIDELINES

Length and Width: Use track minimum outline

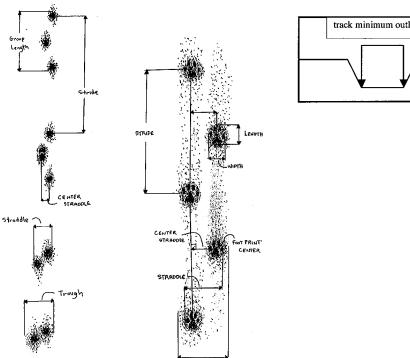
Group length: measured from the back of the track furthest back in a set of 4 tracks to the front of the track furthest forward. NOT USED FOR walking or trotting gaits (groups of 2)

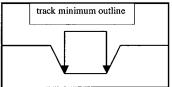
Stride: measured from a place on one foot (such as the "center of the front left") to the same place on the same foot the next time it appears in the trail.

Straddle: distance from the outside of the leftmost track in a trail to the outside of the rightmost (using minimum outline)

Center Straddle: distance from the center of the leftmost track in a trail to the center of the rightmost.

Trough: width of the entire disturbance created by an animals trail (greater then the minimum outline of the tracks which may be indecipherable in some instances)





Cascade Wildlife Monitoring Project Track Measurement Guidelines

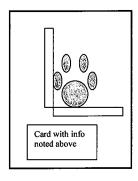
last revised 12/1/08

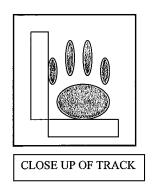
#### PHOTOGRAPHIC DOCUMENTATION GUIDELINES

Cascade Wildlife Monitoring Project

#### PHOTOGRAPHS OF INDIVIDUAL TRACKS:

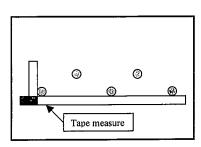
- 1. Take photo looking directly down on track to reduce distortion.
- 2. For close up photographs, fill the entire frame with the track and measuring devises
- 3. Include two scales, preferably rulers, one running lengthwise, the second widthwise.
- 4. Take at least one picture of the track that includes a card in the picture with:
  - Site Name
  - Date
  - Observation Number
  - Team leader's name.
- 5. Take multiple photographs to ensure you get a quality shot.

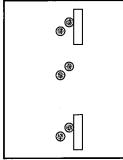




#### PHOTOGRAPHS OF GAITS/TRAIL PATTERNS

- Include a scale of some sort. Often this may be leaving the scale you used for an individual track on the ground by that track (thus also giving a reference for where the individual track sits in the pattern).
- 2. Try to take picture looking straight down on trail to reduce distortion. If this is impossible due to size of trail, include scales both near and far to account for distortion.





#### PHOTOGRAPHING THE SETTING

Also consider taking photographs of people looking at the tracks or sign, or pictures which show the tracks in the context of the location they are found to accompany the detail photographs.

CWMP

Photography Guidelines

last revised 12/1/2008

# Snow Surface Quality Ratings Summary

Dating	Prints	Detail	Detail Location	Gait Patterns	Identification
Rating 4	every print	clear within	all locations	distinctive	by tracks, essentially
	registers	print			absolute
3	every print	weak, snow	details in	gain importance	by prints and gaits
	registers	obscured	microtopographic		
			sites		
2	some do not	no details in	only in	important	by gaits, clues from
	register	open _	microhabitats		details
1	many do not	no details	no details	sole clue	by gaits
	register			<u> </u>	
0	most prints do	no detail	no detail	not complete	not possible
	not register				

USDA Forest Service Gen. Tech. Rep. PSW-GTR-157. 1995.

RAILING R Observer	ECORDDateT	Page of
Transect Name Time Since Last Sn	Side of Highwow (days or hours)	vay (N/S)
Observation Num	ber*: SPECIE	2S:
Narrative:		,
WINMI dates	Description of animal behavior	on trail including relation to road.
N		
E		
N		
E		
N		,
Е		,
N		
E	-	
N		/
Е		
N		
Е		
N		
E		
COMMENTS		
_		

CWMP track and trail data sheets

last revised 12/1/08

## TRACK AND SIGN DATA SHEET

OBSER	VER:			DATE (YYMMDD)		TIN (24	ME (00)			
SPECIE	ES:									
Geograp	phic Lo	cation	<u>:                                    </u>							
UTM		E	astin	No	rthin		Datu			
Zone		g		g			m			
Surface	Surface / Medium:									
COMMI	ENTS:									

DRAWING: (Draw both front and hind prints and trail pattern on back of page.

Measurements (cm) Na (not available) Nt (not taken) Nd (not discernable)							
Front L							
Front W							
Hind L							
Hind W							
Group							
Stride							
Straddle							
Centre Straddle							
Trough							