

# HOW TO AVOID INCIDENTAL TAKE OF WOLVERINE



## DURING REGULATED TRAPPING ACTIVITIES



ASSOCIATION *of*  
FISH & WILDLIFE  
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The purpose of this publication is to help minimize injury and mortality to the wolverine population in the contiguous United States, which may occur incidentally as a result of regulated trapping activities. This pamphlet was produced by the Association of Fish and Wildlife Agencies (AFWA) in cooperation with state fish and wildlife agencies and the U.S. Fish and Wildlife Service. This document is designed to be adapted to the needs of continued wolverine conservation and management efforts and may be periodically revised.

The AFWA governmental members include the fish and wildlife agencies of the states, provinces, and federal governments of the U.S. and Canada. All 50 states are members. The AFWA has been a key organization in promoting sound resource management and strengthening federal, state, and private cooperation in protecting and managing fish and wildlife and their habitats in the public interest.

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Wolverine: *Image courtesy of The Wolverine Foundation, Inc.*

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## **How to Avoid Incidental Take of Wolverine During Regulated Trapping Activities**

Wolverines were nearly extirpated from the contiguous United States in the early 20th century likely due to broad-scale predator control programs and habitat degradation. Since that time they have made a remarkable recovery. Breeding populations of wolverines in the contiguous United States currently exist in the North Cascades in Washington and the Northern Rocky Mountains in Idaho, Montana, and Wyoming. Individual wolverines have also been detected in historic range in the Wallowa Mountains in northeastern Oregon, the Inland North Coast and Sierra Nevada Mountains of California, and the Southern Rocky Mountains of Colorado, but may not have established breeding populations in these areas.

Research indicates that wolverines either did not exist as established populations or were extirpated prior to settlement and before the compilation of historical records in the Great Lakes region. The widely scattered records of sightings and captures of wolverines from this region are consistent with dispersing individuals from a Canadian population that receded north in the early 1800s. The possibility that wolverines existed as established populations prior to the onset of any trapping activities in this area cannot be ruled out, but we have no evidence that they did. No evidence in the historical records suggests that wolverines were ever present as established populations in the Great Plains, Midwest, or Northeast.

Mapping the historical range and present distribution of wolverines is inherently difficult for several reasons. Wolverines tend to live in remote and inhospitable places away from human populations. Wolverines naturally occur at low densities and are rarely encountered where they do occur. Wolverines often move long distances in short periods of time when dispersing from natal ranges, making it difficult or impossible to distinguish with confidence between occurrence records that represent established populations and those that represent short-term occupancy without the potential for establishment of home ranges and reproduction. These natural attributes of wolverines make it difficult to determine their present range, or trends in range expansion or contraction that may have occurred in the past. (Adapted: *Courtesy United States Fish and Wildlife Service*)

## Identifying Characteristics and Background Information

### *Description*

The wolverine is a member of the weasel family (Family Mustelidae). Wolverines are brown in color, and usually have a blond or buff-colored lateral stripe on either side of the body from the shoulders to the tail; they also often have a light-colored mask on their forehead and above their eyes (Fig. 1). Wolverines are stocky but typically weigh less than 35 pounds and are about 25–40 inches in length including the tail. As with most wildlife species, it is very easy to overestimate size and weight of an

animal, especially when only a glimpse occurs. Other species that may be commonly misidentified as wolverines include the montane subspecies of red fox (e.g., cross color phase) (Fig. 2), and the much smaller American badger (Fig. 3), fisher (Fig. 4), or marmot (Fig. 5).



Fig. 1. Wolverine with characteristic lateral stripe and mask. *Image courtesy of The Wolverine Foundation, Inc.*



Fig. 2. Montane red fox (cross color phase). [http://kanuti.fws.gov/fox\\_fact\\_friday.htm](http://kanuti.fws.gov/fox_fact_friday.htm)



Fig. 3. American badger. [http://calphotos.berkeley.edu/cgi/img\\_query?where-kwid=8030+3192+4155+0023&one=T](http://calphotos.berkeley.edu/cgi/img_query?where-kwid=8030+3192+4155+0023&one=T)



Fig. 4. Fisher <http://www.fws.gov/midwest/necedah/cranes.html>



Fig. 5. Marmot. <http://www.nps.gov/olym/naturescience/marmot-research-and-related-links.htm>



## *Sign*

Tracks left by wolverines may be the most obvious sign of their presence. Each foot has 5 toes, although often, only 4 toes may show in tracks (Fig. 6). Tracks are about 3½ to 6¼ inches long by 3¼ to 5¼ inches wide. The 1x2x1 lope (with 3 depressions) is a common gait for wolverines (Fig. 7), but frequent changes in gait between walk, lunge (2x2), and lope (1x2x1) are also characteristic. Stride may be up to 45 inches. Tracks from smaller black bears, wolf, lynx or domestic dogs may be confused with those of wolverines, but smaller tracks of black bear in snow are most commonly confused with wolverine even by experienced observers. Observers may more easily identify individual track characteristics (e.g., number of toes, pad shape, claw marks) if they follow a set of tracks and find where the animal is walking.



Fig. 6. Wolverine tracks, hind foot to left. Note only 4 of 5 toes registering in hind track and heel pad registering in front track. *Image courtesy of The Wolverine Foundation, Inc.*



Fig. 7. One-by-two-by-one lope of wolverine is unique. *Image courtesy of The Wolverine Foundation, Inc. and Jason Wilmot.*

Other sign that may be left by wolverines includes scat and biting and scratching of trees, but this type of sign is uncommon. Occasionally scat may be found on logs, tussocks, rocks or other prominent objects, but it is most commonly left in places not easily detected. Trees of various sizes may be scratched and bitten. These signs left by wolverine may signal ownership of a food cache in close proximity and also serve as territorial markers. It is important to assess more than one type of sign to help determine whether a wolverine is frequenting an area.

## **Behavior, Life History and Diet**

Wolverine may be active during any part of a 24-hour period. The wolverine is typically solitary, except during the breeding season (May-August), and immediately prior to it when males may make incursions into female home ranges (February-April). Breeding occurs during late spring to late summer and due to delayed implantation, young are usually born during February or March. Litter size ranges from 1 to 5 kits and litters of 2-3 kits are common, but some mortality of kits often occurs. Female wolverines give birth to young in natal dens that provide security for offspring and buffer cold winter temperatures. Wolverines are born in

protected sites frequently associated with snow-covered uprooted trees, avalanche debris, overhanging banks, boulder scree, or snow tunnels in drifted areas.

The wolverine is primarily a generalist carnivore and scavenger. It is capable of killing animals many times its own size but carrion of large ungulates is most commonly eaten during winter. During summer, smaller mammals such as porcupines, hares, marmots and ground squirrels make up the majority of the diet. Many wolverine adaptations allow it to "clean up" kill sites from other large predators like wolves and bears. Wolverines have strong teeth and high bite forces that allow them to break the bones at kill sites that other predators have left behind, in order to consume the energy-rich marrow. The wolverine's diet also includes small birds, eggs, and berries.

## **Habitat Preferences**

In North America, wolverines occur within a wide variety of habitats, primarily boreal forests, tundra, and western mountains throughout Alaska and Canada. The southern portion of the range extends into the contiguous United States. Generally, suitable habitat is found at higher elevations as one moves farther south in their geographic range. Wolverines may shift their daily activities where they occur in areas with high levels of human activities, such as winter recreation areas. High-elevation wilderness areas, where human access is limited and snowfall and snow depths are high, are areas that may contain the most suitable habitat for wolverines in the southern extent of the range.

## Trapping Methods to Avoid Capturing Wolverine

The probability of capturing a wolverine during regulated trapping activities in the contiguous United States is very low. However, before setting traps, trappers should familiarize themselves with the distribution of wolverines within the state(s) where they plan to trap by contacting the appropriate state fish and wildlife agency or the U.S. Fish and Wildlife Service. If traps are set in areas where wolverines are known or suspected to occur, trappers are encouraged to follow these guidelines:

### *Foothold Traps*

Coyotes, foxes, bobcats and other common species that are trapped often use the same areas as wolverine. Incidental captures of wolverine can be reduced by using a proper-sized foothold trap; be sure to follow your state's regulations for any restrictions they may have on foothold traps. Number 2 coil-spring traps (~ 5 ½ - 6-inch jaw-spread) or number 1.75 coil-spring traps (~ 5 ½ - 5 ½ -inch jaw-spread) help discriminate against wolverine captures due to a relatively small trap-jaw spread. However, based on AFWA Best Management Practices for Trapping (see [http://www.fishwildlife.org/index.php?section=furbearer\\_management&activator=27](http://www.fishwildlife.org/index.php?section=furbearer_management&activator=27)), these sized traps maintain excellent efficiency for bobcats, foxes, and coyotes. Use of padded-jaw traps or traps with laminated and offset jaws can minimize injury. Another appropriate foothold trap to consider where wolverine may be present is the padded number 3 coil-spring trap (~ 6 - 6 ½-inch jaw-spread). With a smaller foothold trap (e.g., less than 4 ½-inch jaw-spread or smaller than #1 ½), a wolverine may simply pull out. With medium-size or larger traps (e.g., greater than 4 ½-inch jaw-spread or size #1 ½ or larger), a wolverine may be captured and held until physically released. If this situation occurs, follow the guidelines at the end of this document, including contacting your state wildlife agency or the U.S. Fish and Wildlife Service.

Traps used to capture wolves generally have a wider jaw-spread and are more powerful than those used for other furbearers. As a result, these traps are likely to capture and hold a wolverine. To avoid capturing wolverine in traps set for wolves, set the pan tension on wolf traps to 10 pounds. This pan tension will allow a wolf to depress the pan and fire the trap, but should avoid wolverine.

Trap set locations that help to avoid wolverine captures include open meadows, pastures, and crop lands. Wolverine rarely use agricultural lands and generally prefer high-elevation forested or brushy areas. Wolverine often avoid traps set for foxes and coyotes when the traps are placed in open fields. Large baits may be more attractive to wolverines than smaller baits. When using baits larger than 5 pounds, traps should be set at least 30 feet from the bait; as this distance increases, it may become less likely to incidentally capture a wolverine (and more likely to capture a wolf, if that is the target species). If your state's regulations specify a distance greater than 30 feet, be sure to adhere to that requirement.

Wolverine are strong and consequently, the anchoring system, be it a drag or stake, must be sturdy. If a staked set is used (staked in the ground or attached to a tree or other immovable object in heavy snow) the trap must be well secured. Trap attachment chains in staked sets should be equipped with at least two swivels (inline and anchor-point). If a wolverine is captured in a trap, the chain and swivels used should be sturdy enough not to fail or break. J-hooks should be spot welded shut to prevent a wolverine from opening them and escaping with a trap on its foot, which is an extremely undesirable situation. Wolverine often directly self-release from small traps by bending or breaking the trap if it is anchored solidly and this can be a preferable outcome should an incidental capture occur, especially

in comparison to the obligation of releasing a wolverine. If a drag system is used, the trap should have at least 8 feet of strong chain attached to a grapple or other heavy object. Tie-wire should be avoided unless it is a large gauge wire (e.g. #9 wire) or multiple strands of 14 gauge (or heavier) wire. Wolverines may twist their bodies around during capture, which frequently breaks smaller wire.

Pan-tension devices generally won't be effective for selecting against wolverines when the target species is of similar or smaller size. Detailed information on foothold traps that meet criteria for Best Management Practices for Trapping may be found at [http://www.fishwildlife.org/index.php?section=furbearer\\_management&activator=27](http://www.fishwildlife.org/index.php?section=furbearer_management&activator=27). Trappers targeting bobcats, coyotes, or badgers should consider using such traps because in the unlikely event of a wolverine capture, it is very likely that the wolverine may be released unharmed.

### *Bodygrip Traps*

Incidental captures of wolverine may also be minimized by excluding the use of large bodygrip traps, including 220 (7x7 inch window), 280 (8x8 inch window), and 330 (10x10 inch window) sizes. Also, avoid the use of bait within 30 feet of any bodygrip trap with a jaw-spread greater than 5 inches. Securely anchor traps, as it may be possible for a wolverine to pull out of smaller bodygrip traps, especially if held by a foot. Placing smaller bodygrip traps inside cubbies should also help avoid incidental capture of wolverine.

Marten and fisher often use the same habitat as wolverine. To avoid wolverine in marten or fisher sets, baits and traps should be placed on leaning poles at least 4 feet above the ground or snow level. Leaning poles should be as small as possible (no larger than 4 inches in diameter) as this

is adequate for marten or fisher, yet may discourage wolverines from climbing to investigate the elevated trap set. Leaning poles should be set at a 45 degree angle or greater (Fig. 8). Consider using the smallest traps suitable if marten (e.g., 120 [4 ½ x 4 ½ inch window]) or fisher (e.g. 160 [6x6 inch window]) are the target animal.



Fig. 8. Leaning poles for marten and fisher should be less than 4 inches in diameter and set at a 45-degree angle or greater to avoid incidental captures of wolverine. *B. Giddings, Montana FWP.*

### *Snares*

Use only "relaxing" locks (e.g., washer locks, Relax-A-Locks) on cable-restraints (snares); do not use lethal snares in areas where wolverine may be present. Avoid entanglement situations or situations where suspension of animal may occur. Use inline and anchor-point swivels and consider using a stop for a minimum loop size of 5" on snares set for wolves so

that the loop diameter would not hold a wolverine. Securely anchor snares, as wolverines are known to break snares; if a wolverine chews through the snare cable, a relaxing lock may allow the snare to loosen and fall off.

Experienced wolf trappers recommend that when setting snares for wolves but avoiding wolverines, the bottom of the snare loop should be 18-21" or more above the ground or packed snow surface, and avoid areas where incidental captures of deer or other ungulates may occur. The bottom height of wolf snares should be about level with the average-height man's kneecap. Know where the above recommended height occurs on your leg as a guide for snare height. Using your leg is the best measure because where the snow compacts under foot is a better estimate than distance from the ground as measured with a ruler or tape measure. Snares need to be checked and height readjusted after significant snowfall.

## **Minimizing Mortality and Injuries to Incidentally Captured Wolverine**

If you capture a wolverine, contact your state fish and wildlife office (Monday-Friday, business hours) listed below. Also, keep alternate phone numbers handy for biologists and state wildlife law enforcement officers in your area for assistance after-hours and on weekends.

Releasing a captured wolverine should be undertaken with extreme caution and only trained individuals should attempt this. Wolverine behavior is unpredictable and may result in injury to a trapper that has not been trained for release situations. Contacting a biologist or warden to assist in this effort is advised. Professional assistance from a government wildlife



agency can benefit safety for the trapper and provide for an opportunity for sedation and rehabilitation of the captured wolverine, if necessary.

Never attempt to render a trapped wolverine unconscious with a blow to the nose or head or by any other means. Life-threatening injury to the wolverine may result.

#### State Wildlife Agency Contacts:

California	916-445-0411
Colorado	303-297-1192
Idaho	208-334-2920
Montana	406-444-2612
Oregon	503-947-6000
Utah	801-538-4700
Washington	360-902-2200
Wyoming	307-332-2688

#### U.S. Fish and Wildlife Service Contacts:

Region 1 (Pacific Region)	503-231-6121
Region 2 (Southwest Region)	505-248-6911
Region 6 (Mountain-Prairie Region)	303-236-7905
Region 8 (Pacific Southwest Region)	916-414-6464

## Quick Reference:

### Recommendations to Avoid Incidental Capture of Wolverine during Regulated Trapping Activities

- Set pan tension for wolftraps to at least 10 pounds of pressure to prevent a wolverine from firing a trap set for wolf
- Use a #2 or smaller foothold trap for other furbearers (except wolf) or consider a rubber-padded foothold trap if a #3 size or larger is used.
- ◆ Make marten and fisher sets on leaning poles no larger than 4" in diameter and set at a 45 (or greater) degree angle with trap and bait placed at least four feet above the ground or snow level.
- Do not use large sized bodygrip traps if wolverine tracks are observed in the vicinity of a set.
- When using baits larger than 5 pounds, traps should be set at least 30 feet from the bait; farther is better.
- To avoid wolverine in snares set for wolf, place the bottom of the snare loop just below knee cap level (18-21" above the ground or packed snow surface).
- Follow all state regulations, especially if those regulations specify more restrictions than those outlined above.

### Minimizing Injury and What to Do if You Incidentally Capture a Wolverine

- If using a staked set, stake the trap so that a wolverine cannot get entangled around a solid object (even a small sapling) after being captured and keep catch circle clear of solid objects. Trap attachment chains should be very sturdy and equipped with at least two swivels. J-hooks should be spot-welded closed.
- If using drags, use at least 8 feet of sturdy chain.
- Use of padded-jaw foothold traps or foothold traps with laminated and offset jaws can reduce injury.
- Contact a biologist or warden if you capture a wolverine. Having a wildlife professional (biologist or warden) to assist in the release of a captured wolverine is advised for the safety of the trapper and animal.



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