



Absaroka Beartooth Wolverine Project completes fourth winter

The Absaroka-Beartooth Wolverine Project, through the generous support of the Yellowstone Park Foundation and numerous partners, continues to improve our understanding of wolverine ecology in the Greater Yellowstone Ecosystem.

The wolverine project continued monitoring radio-marked individuals, aerial (helicopter-based) surveys for tracks, and public outreach in 2009. Two trap-lines, each consisting of three wolverine live-traps, were operated in the Absaroka Range north of Yellowstone and Sylvan Pass. Our capture effort in 2009 totaled 636 trap-nights. However, no wolverines were captured.

Fifty-three locations have been obtained on five radio-marked wolverines monitored in 2009 to date. One wolverine occurred in the Absaroka-Beartooth Wilderness, three in the southeast (Thorofare) region of the park, and one merely passed through the park from the southwest to northeast corners. Three of these individuals were originally radio-marked outside our study area by the Wildlife Conservation Society wolverine study, and the two projects cooperatively monitored their movements. We estimated annual home ranges of 72 mi² and 237 mi² for two resident females and 399 mi² for a resident male. We investigated five radiolocation clusters of an adult female in the North Absaroka-Beartooth Wilderness and found that she scavenged a mountain goat, but found no evidence of offspring.



Male M2, Yellowstone River.

We closely monitored two young wolverines in an effort to document the age they first produced offspring, an important characteristic for species with low reproductive rates. From late February to early May we monitored these females with numerous telemetry flights, but were unable to determine if either individual produced offspring at the age of three years. We will continue to monitor these females in the hope of locating a den or observing offspring at their radio locations.



Surveyed areas included the Pitchstone Plateau in Yellowstone National Park.

We completed the second and third of three total park-wide surveys for wolverine tracks in 2009 using a helicopter. The first survey occurred in April, 2008. Nearly all detected tracks were in areas that supported radio-marked individuals. We found no tracks in the park interior. Collectively, our three replicate surveys provided reliable and valuable data concerning the distribution of wolverines in the park. We also collaborated with Wyoming Game and Fish to survey bighorn sheep and mountain goat numbers and distribution (potential wolverine food sources, through predation or scavenging) along the crest of the park's east boundary.



Wolverine track as seen from the air. Yellowstone 2009.

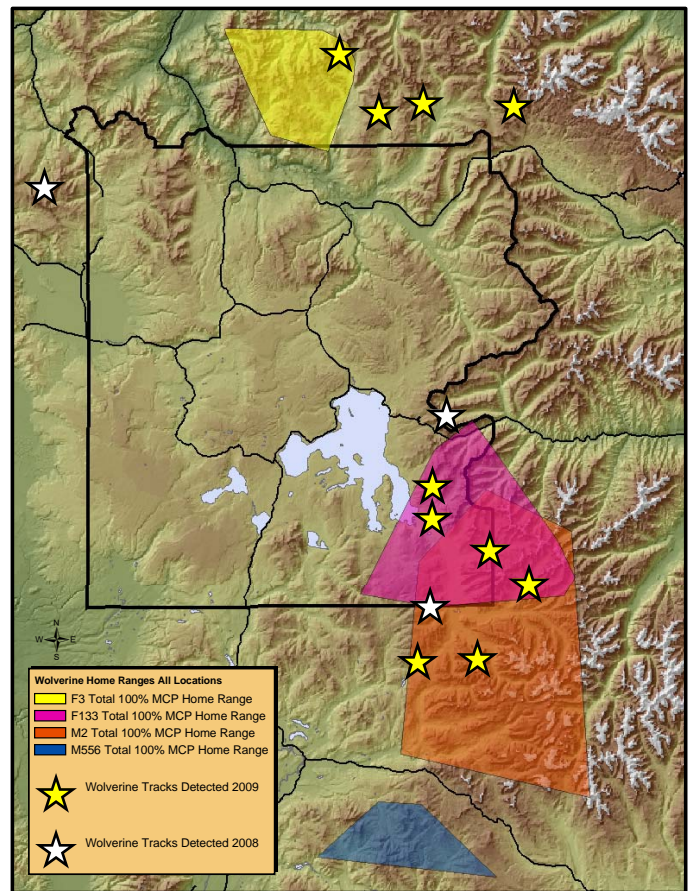
Aerial Survey Improves Understanding of Wolverine Distribution in the Yellowstone Ecosystem

From February to April 2009, we completed two separate aerial (helicopter) surveys to document wolverine snow trails (tracks) in Yellowstone National Park and adjoining portions of the Gallatin, Shoshone, and Bridger-Teton National Forests. These efforts followed similarly from work conducted in April, 2008 that resulted in an initial survey replicate. Collectively, the three surveys provided a reliable snapshot of the distribution of wolverines in this area and a opportunity to determine if results were consistent with live-trapping data, collected in 2006 to 2007, that indicated wolverines were absent from large portions of our study area.

The wolverine's unique track characteristics and gait patterns are easily identified from a helicopter when snow conditions are favorable, even without landing and closely inspecting tracks. During each of the three survey replicates, we searched every other 10 x 10 km grid cell that overlapped wolverine habitat, flying diagonal, straight-line routes across our study area. Each replicate required three days of survey time. Weather permitting, flights occurred over consecutive days. Surveys were conducted 2–6 days following a snowfall and during periods when the snowpack was firm. The flight crew consisted of a pilot and two experienced observers. The helicopter was flown at about 1,000 feet above ground level, but at lower elevations as necessary to view tracks at closer range.

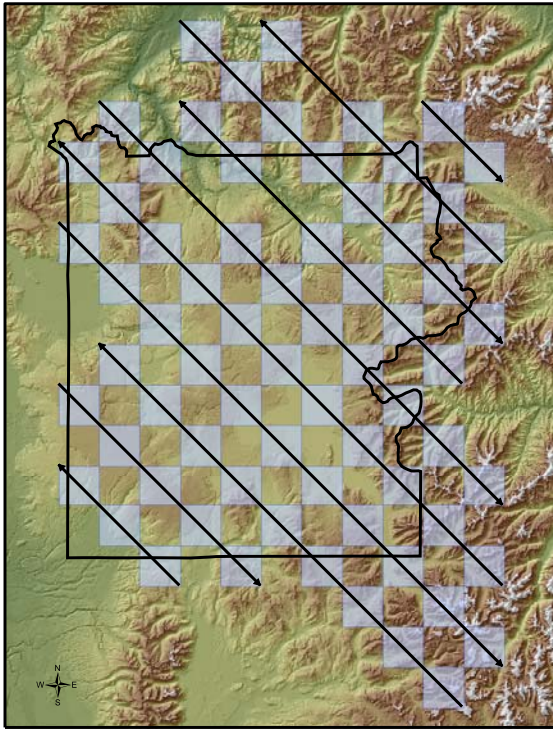
We detected four wolverine tracks during the February–March 2009 (replicate #2) and six during the March–April 2009 surveys (replicate #3). Thirteen total wolverine tracks, representing a minimum five individuals, were found during the three surveys in the Madison Range and in the North Absaroka Bear-tooth Wilderness, Gallatin National Forest (north of Yellowstone National Park), and in southeast portion of the park and adjoining national forests. We did not detect wolverines in the interior or the northeast corner of the park, including the southern portion of the Beartooth Plateau, the Central, Madison and Belcher Plateaus, the Gallatin and Washburn Ranges, and the Red Mountains. These results suggest that few, if any, wolverines currently occur in these areas. The lack of detections in these portions of Yellowstone and the Absaroka Range between Cooke City and Sylvan Pass is significant when considering that wolverines have been present in this region periodically. Lack of wolverine presence may be due to intra or inter-specific competition, habitat characteristics, or natural population variation. These results emphasize the need to develop a finer-scale understanding of wolverine habitat relationships, competition and availability of food resources, and demographics.

Our results indicate that replicate helicopter-based surveys for wolverine tracks are effective in mountainous terrain. This technique produced repeat detections of tracks in both portions of our study area that support resident, radio-marked wolverines. We had excellent success detecting our radio-marked individuals in their home ranges, finding their tracks in six of the six blind tests we conducted. This approach has strong potential for documenting wolverine presence and distribution elsewhere in the Rocky Mountains and is already in use by several national forests in central Idaho.

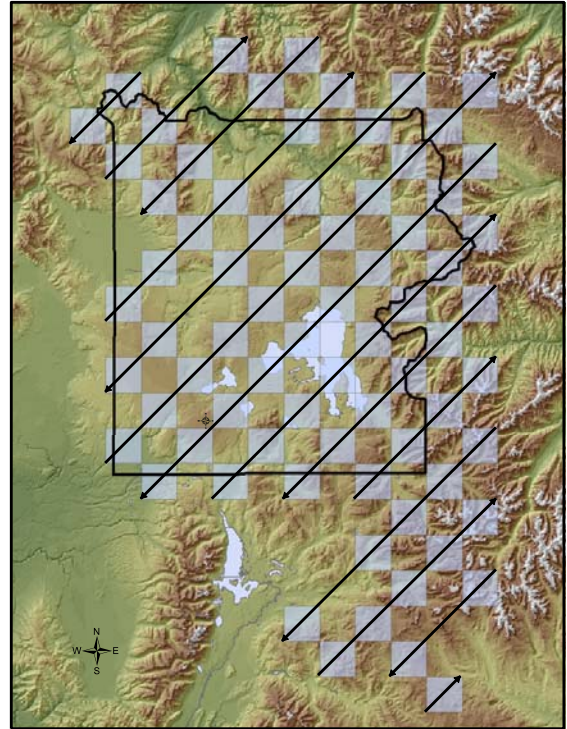


Home range estimates of four marked wolverines and locations of tracks detected during aerial surveys in 2008 and 2009.

Numerous cooperators continue to contribute time, effort, and resources to this project, including the Yellowstone Park Foundation, the Gallatin, Shoshone, Bridger-Teton, Beaverhead-Deerlodge, and Caribou-Targhee National Forests, Yellowstone National Park, the USDA Forest Service Rocky Mountain Research Station, Greater Yellowstone Coordinating Committee, the Northern Rockies Conservation Cooperative, The University of Montana, Montana Fish, Wildlife & Parks, Wyoming Game & Fish, the Wolverine Foundation, and the Rocky Mountain Cooperative Ecosystems Studies Unit.



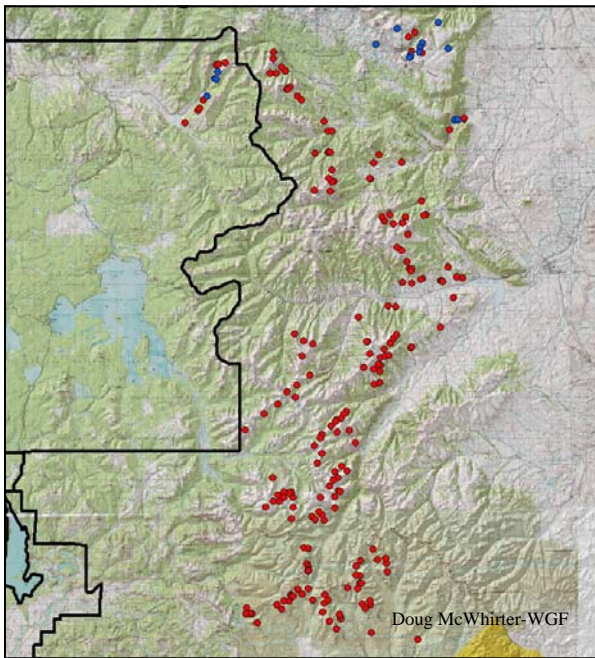
Survey transects and survey cells Replicate 2, 2009



Survey transects and survey cells Replicate 3, 2009



Second Winter Survey of Ungulates (Carrion) in Wolverine Habitat



Locations of bighorn sheep (red circles) and mountain goat (blue circles) sightings in the Absaroka Mountain Range, east Yellowstone Park boundary.

During April 2009, we continued cooperative efforts with Wyoming Game and Fish to document the number and distribution of ungulates, primarily bighorn sheep, along the east Yellowstone National Park boundary and in the adjoining Absaroka-Beartooth and Washakie Wilderness Areas. Our live-trapping data and aerial surveys suggest an absence of wolverines between Sylvan Pass & the southern margin of the Beartooth Plateau. We hypothesized that this may be due to the absence of ungulate carrion, which is an important food for wolverines during the winter.

The 2009 ungulate surveys occurred over the course of six days from January to April. During the winter and early spring, the Absaroka and Beartooth Ranges support persistent deep snow-pack interspersed with occasional windblown ridges and slopes at high elevations (>8,000 feet) that provide forage for ungulates. In total, two observers counted 2,052 bighorn sheep (the most abundant ungulate) in 216 groups. Only 22% of bighorn sheep numbers and 30 percent of groups occurred north of Sylvan Pass, including the northeast portion of Yellowstone National Park. Bighorn sheep in both regions appeared to increase their activity at lower elevations as winter progressed, perhaps related to increased accessibility to forage on warm, snow-free slopes. Our results suggest that indeed fewer prey and carrion are available to wolverines north of Sylvan Pass compared to the similarly-sized survey area to the south. However, the extent that the abundance and distribution of carrion in two areas influences wolverine numbers and distribution remains unclear.

Outreach Efforts Continue into 2009 and beyond

An ongoing objective of this project is to foster appreciation and support for wolverine conservation through public education. The Educational Office in Yellowstone's Division of Interpretation is conducting community outreach (e.g. booths and displays) that includes wolverine education components in the Yellowstone region during spring and summer 2009. Interpretive rangers are setting up booths and displays at community environmental fairs, tribal powwows, and are making appearances at zoos and museums. Project biologists will also make several wolverine presentations to the general public and professional groups during summer 2009.

Many people contributed time and effort to this project. We would like to extend our thanks to the following individuals for their assistance and interest over the last year.

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Thank You!

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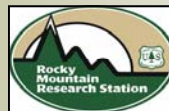
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