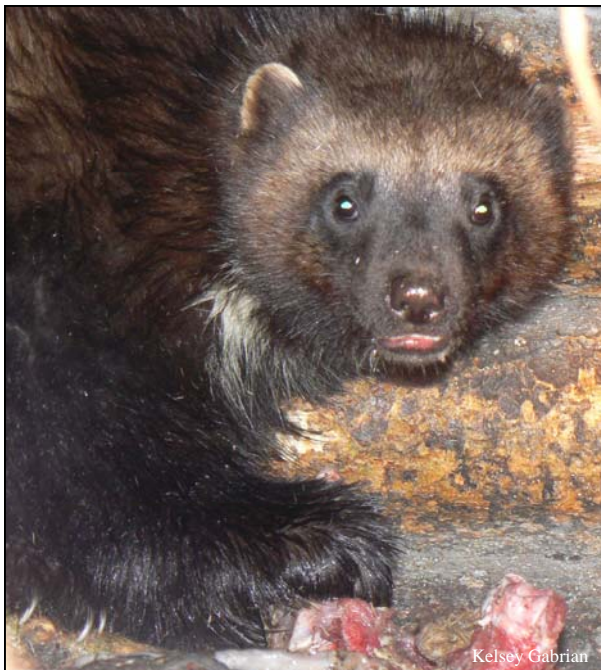




Absaroka Beartooth Wolverine Project strives to increase our understanding of one of the rarest and least understood carnivores in North America.



Female F3, March 2007

Through the generous support of the Yellowstone Park Foundation, the Absaroka-Beartooth Wolverine Project continues efforts to address and remedy important information shortfalls regarding wolverine ecology and residency status in and around Yellowstone National Park. In November of 2005, this project began a comprehensive 5-year field study to evaluate wolverine status and ecology in the eastern half of the Greater Yellowstone Ecosystem.

Now in our second year, we continue to study wolverine dependence upon habitats in Yellowstone and surrounding Forest Service lands. We are documenting wolverine distribution and movements, habitat and food associations, and population parameters such as survival rates, birth rates, and dispersal rates.

A second goal of this project is to foster appreciation and support for wolverine conservation through public education. We accomplish this via public talks, mass media press coverage, and working with the NPS Parkkids program.



Absaroka-Beartooth wolverine project captures and instruments 1 adult male and 1 young female wolverine.

This spring, the Absaroka Beartooth Wolverine Project completed its second winter season of efforts to live-trap wolverine. Over four months during the winter of 2006-2007, a total of 8 technicians and 6 volunteers were busy across the study area, working out of Gardiner, Cooke City, Lake Village, Canyon Village, and Sunlight basin. We accumulated a total of 2,715 trap

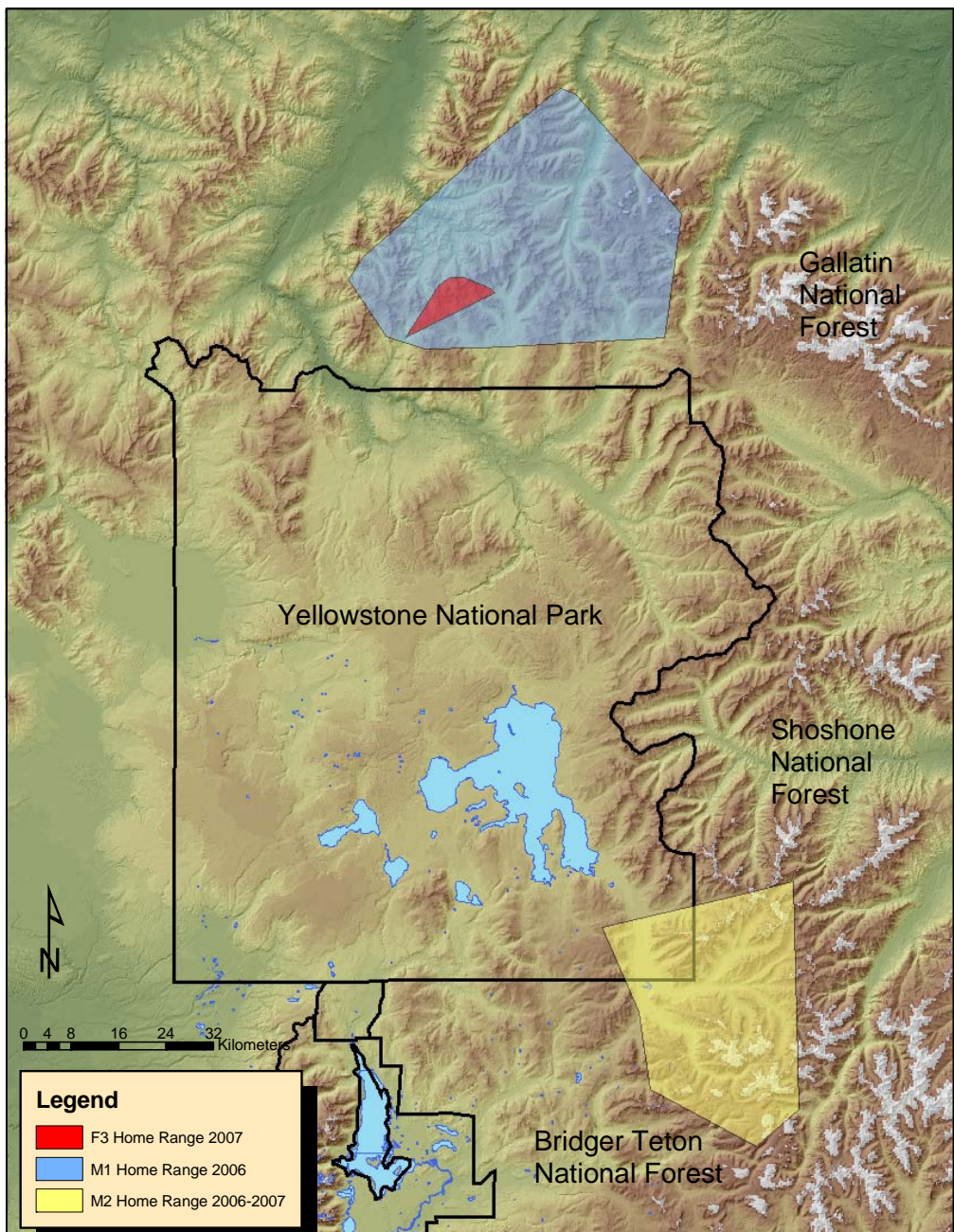
nights through the season by operating 32 log-box traps. Two new individual wolverines were captured, including a young female wolverine (F3) north of Yellowstone Park and a young male (M4) in the same area. Both of these individuals were instrumented with an intraperitoneal implant VHF transmitter, and timed-release, store-on-board GPS collar (SirTrack). M1, a resident male

of the Absaroka Range in Montana, originally captured in 2006, was legally taken by a trapper in February of 2007. We currently have three instrumented wolverine in the Yellowstone Ecosystem, two of which are still wearing their store-on-board GPS collars. Non-target captures included 115 red fox, 52 marten, 3 coyote, and 1 cougar.

Trapping Summary:

- *Duration of trapping: 12/5/2006 to 4/1/2007*
- *Number of trap lines: 5*
- *Total traps: 32*
- *Total trap nights: 2,715*
- *Wolverine captures: 1 adult male and 1 young female*

Numerous cooperators are contributing time, effort, and resources to this project, including the Yellowstone Park Foundation, the Gallatin and Shoshone National Forests, Yellowstone National Park, the USDA Forest Service Rocky Mountain Research Station, Greater Yellowstone Coordinating Committee, Northern Rockies Conservation Cooperative, The University of Montana, Montana Fish, Wildlife & Parks, Wyoming Game & Fish, and the Rocky Mountain Cooperative Ecosystems Studies Unit.



M1 had a home range that encompassed 1,600 km² (615 mi²) in the high Absaroka Range north of Yellowstone Park. He primarily used the snowy crest of the range above timberline and ate mountain goat carrion.

F3 was captured on March 11, 2007. She was young, and approximately 1 year old. At capture she weighed 8.2 kg (18 pounds). She continues to occupy habitat north of Yellowstone Park in the Absaroka Range. We are monitoring her movements via aerial telemetry, and expect to recover significant GPS data from her drop-off collar as well. Her preliminary range size currently is 57 km² (22 mi²).

M4 (range not shown at left), was captured March 18, 2007 and has used areas similar to M1. His age at capture was approximately 3 years, and he weighed 14.6 kg (32 pounds). At this time, M4 apparently has made a large movement and we are currently searching for him with an airplane.

M2, captured at Sylvan Pass in Yellowstone Park in 2006, continues to inhabit high elevations (>10,000 ft) to the south and east of Yellowstone in some of the most remote country in the lower 48 states. We are monitoring his movements over a home range estimated at 1,009 km² (388 mi²) in size.

Home ranges (minimum convex polygon) of M1 in the Absaroka Range based on GPS collar data and aerial surveillance 2006, F3 via aerial surveillance 2007, and M2 via aerial surveillance 2006-2007.

Collaboration with other wolverine research projects

We coordinate numerous aspects of the project with other wolverine studies and laboratories in the northern contiguous U.S. These efforts reduce costs, improve work efficiency, and extend the diversity of information available for the species. For example, we coordinate with the Greater Yellowstone Wolverine Project, Wildlife Conservation Society (WCS), to eliminate VHF radio frequency overlap, search for wolverines “lost” to aircraft surveillance, and exchange important information. WCS biologist Bob Inman has contributed greatly to discussions about trap placement (desired elevation, habitat types), and we are currently providing wolverine radio location data to the WCS from our study site to help them test their habitat model developed from wolverines captured on their Madison and Teton focal areas. WCS provided input on our study plan, and we hope to collaborate on publications. We also exchange information with two meso-carnivore projects in the Yellowstone Ecosystem, namely those conducted by Wild Things Unlimited (Steve Gehman and Betsy Robinson), Bozeman, and the Gallatin National Forest Gardiner Ranger District (Dan Tyers), the latter which also manages our day-to-day trapping operation near the north Absaroka-Beartooth wilderness.

We work closely with the Glacier National Park wolverine project, whose principal investigator is Jeff Copeland, an investigator on this study. We draw heavily from Glacier project expertise in radio collar design and programming, and their findings concerning natal denning, movements, and wolverine behavior. Our personnel make occasional trips to Glacier to assist in field work.

Our wolverine tissue samples are sent to the Rocky Mountain Research Station, Missoula, for analysis of individual relatedness and regional-scale population genetics. Genetics samples collected elsewhere in the region, such as those from wolverines taken during trapping seasons (Montana) and other wolverine studies, also contribute samples to this laboratory. We send blood samples from captured wolverines to the Montana Department of Fish, Wildlife and Parks Laboratory, Bozeman, for studies of blood-borne diseases and blood chemistry. This laboratory provides us data on sex-age, and reproductive information on wolverines taken by trappers.

We expect our collaborative ties with other studies to increase as opportunities arise.



Next steps



Male M4 heads out after processing.

Our most recent field season informed us of the need to adapt our field efforts to enhance our detection power and capture rate of wolverines. Although sightings records from the park and the national forests support historical presence of wolverines in the central portion of our study site, resident individuals may currently be absent. With the exception of the wolverine (M2) captured at Sylvan Pass in 2006, we have not detected wolverines in the central portion of our study area during snow tracking surveys. Our capture protocol has been demonstrated effective in detecting wolverine presence in other similar study areas, which leads us to believe that resident wolverine could be absent from the central portion.

We are and will continue to satisfy project objectives through wolverine detection, capture and instrumentation, and educational outreach. We are monitoring three individual wolverines via aerial telemetry, and two of these individuals are carrying store-on-board GPS collars. These data continue to reveal information central to our project objectives.

Project leaders and cooperators are considering a range of options that will maximize return on the expenditures involved in documenting wolverine distribution and residency in our study area, including an enhanced survey component. Our goal is to ensure the best possible sampling intensity—distributed appropriately across our study area—to obtain information needed by Yellowstone National Park and surrounding National Forests. We are also discussing with Wyoming Game and Fish combined wolverine detection and winter bighorn sheep surveys using a helicopter along the Absaroka Divide in Wyoming.

Where practical, we will continue live-trapping efforts to capture wolverine. This will be instrumental for our continued investigation of wolverine population characteristics, sources of mortality, habitat selection, connectivity with other populations, and reproductive den site characteristics.

Outreach Efforts Continue

An essential component of our work is to educate the public about wolverine ecology in the Yellowstone ecosystem. Two wolverine study day camps are scheduled at Yellowstone gateway communities this summer in cooperation with the Yellowstone National Park Division of Interpretation. Numerous additional talks and outreach activities are scheduled. Our goal to increase public awareness of wolverine ecology, research, and conservation has benefited from the publication of numerous articles geared toward the general public. The Absaroka Beartooth Wolverine Project was discussed in the National Parks Conservation Association's Summer 2006 *National Parks Magazine*, the Yellowstone Association's June 2007 *Yellowstone Discovery* magazine, and the National Wildlife Federation's June/July 2007 *National Wildlife* magazine.



A Yellowstone Division of Interpretation ParKids group visits a wolverine trap site in May of 2007.

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.

Yellowstone Park Foundation Molly Pickall & Lisa Diekmann

Technicians Keith Van Etten, Nathan Stone, Jeremy Zimmer, Matt Scrafford, Siri Framness, & Kelsey Gabrian

Volunteers Carrie Byron, Jocelyn Akins, Eric Bindseil, Kate Shick & Rebecca Watters (summer 2006)

Veterinarians Dr. Dave Hunter, Dr. Jim Felton, Dr. Dave Pendray

Pilots Doug Chapman & Dave Stinson

GIS Specialist Cheryl Copeland

Gallatin National Forest Dan Tyers & Ken Britton

Shoshone National Forest Lynette Otto

Montana, Fish, Wildlife & Parks Brian Giddings, Tom Lemke, & Kurt Alt

Wyoming Game & Fish Andy Johnson, Bob Oakleaf, Susan Patla, Mark Brusino, Chris Queen & Doug McQuirter

Rocky Mountain Cooperative Ecosystems Studies Unit Kathy Tonnessen

Greater Yellowstone Coordinating Committee Mary Maj

RMRS Wildlife Ecology Unit's Genetics Laboratory Mike Schwartz, Kristy Pilgrim, & Cory Engkjer

Yellowstone National Park Kurt Speers, Christie Koehler, Candice Phipps, Mary Kay Woodin, Jason Ogle, Colette Daigle-Berg, Bruce Sefton, Christie Hendrix, Steve Miller, Kerry Gunther, Travis Wyman, Elaine Hale, Michael Keator, Art Truman, Troy Davis, Mike Ross, & Brad Ross

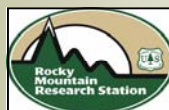
Thank You!

For more information contact:

Jeff Copeland
Wildlife Biologist
Rocky Mountain Research Station
406-542-4165
jcopeland@fs.fed.us

Kerry Murphy
Wildlife Biologist
Yellowstone National Park
307-739-3321
kerry_murphy@nps.gov

Jason Wilmot
Field Coordinator
Absaroka Beartooth Wolverine Project
406-581-8325
jason@nrccoperative.org



Project Personnel

Co-Principal Investigators
Jeff Copeland & Kerry Murphy

Field Coordinator
Jason Wilmot

Rocky Mountain Research Station
Len Ruggiero & John Squires

Yellowstone National Park
Glenn Plumb

University of Montana
Dan Pletscher