

Missoula County announces Maricelli as new undersheriff

Feb 16

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TOP STORY

Camera traps shed new light on wildlife biology

ROB CHANEY rchaney@missoulian.com Feb 15, 2017 Updated 37 min ago

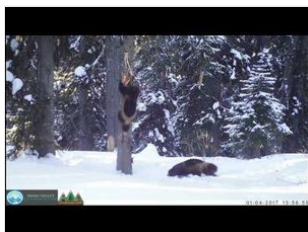


Courtesy J. Paczkowski, Alberta Parks

A Canadian elk study remote camera caught this image of wolves probing the defenses of an elk herd in Banff National Park. Unlike radio collars, camera traps allow biologists to observe behavior of multiple species for relatively low cost.

At a hearing on potential endangered species status a year ago, U.S. District Judge Dana Christensen was one of the few people in the packed courtroom who'd actually seen a wolverine.

That's created a legal conundrum: How do we prove an animal deserves federal protection if it's too elusive to study? The Western States Wolverine Conservation Program has roped together a team of state, federal, tribal, academic and private researchers to answer that problem. And they're benefiting from a tool that's revolutionizing conservation biology: The camera trap.



Wolverines Interact In The Wild Updated 17 hrs ago

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Thanks to a gizmo purchased for a few hundred dollars at a sporting goods store, you too can spy on not one, but two wolverines frolicking around the haunch of a dead deer. No wolverines were handled, drugged, collared, chased, annoyed with helicopters or otherwise harassed in the acquisition of this data.

“Before we started doing this, no one had any idea how many wolverines we had across the landscape,” said Luke Lamar, conservation director for Swan Valley Connections, the nonprofit organization that captured the wolverine video. “And the video shows they’re a little more sociable than previously thought. We still don’t know a lot about that. With the cameras, we’re not just collecting data on one species. We can get lynx, and wolverines and fisher, which we don’t know a lot about either. I’ve seen some lynx in person, but no one here’s seen a wolverine yet.”

The largest members of the weasel family, wolverines weigh up to 40 pounds. But they’re willing to fight grizzly bears 10 times their size for a meal, and patrol huge swaths of territory year-round. They raise young in dens dug in deep snowbanks, making climate change a serious threat if the Rocky Mountains continues to lose its annual snowpack.

Wolverine advocates proposed giving the carnivore listing under the Endangered Species Act in 2014 based on predicted declines in high mountain snowpack from climate change and habitat fragmentation. In its decision not to list, U.S. Fish and Wildlife Service noted that future impacts on wolverines from climate change were not certain. Judge Christensen ruled in April that it had to consider the species’ tiny estimated population – about 300 individuals in the continental United States – against the “immense political pressure” to avoid a federal listing.

Between 2012 and 2015, Swan Valley Connections has documented 22 individual wolverines in the Southwest Crown of the Continent – a landscape stretching from Swan Lake to the mouth of the Blackfoot River and from the Mission Mountains to Rogers Pass on the Rocky Mountain Front. That’s an area more than twice the size of Glacier National Park.

In the early days of wildlife biology, researchers did much of their work in places like the Serengeti Plains of Africa or Yellowstone National Park – because it was easy to observe animals there. Twin brothers Frank and John Craighead pushed the science to a new level with their pioneering work radio-collaring grizzly bears in Yellowstone.

“It’s not an exaggeration that camera traps have completely revolutionized wildlife research for hundreds of species,” said Jedediah Brodie, the John Craighead Endowed Chair of

Conservation professor at the University of Montana. “Before cameras, we were restricted to either using unreliable proxies, or studying species that were really visible.”

Brodie spent the past seven years studying the clouded leopard of Borneo – a predator he’s only seen once with his own eyes. But thanks to camera traps, he’s collected thousands of photos of the big cats in all types of habitats, in family or social groups, in certain times of day or season. He also catches images of every other critter that uses the same habitat, including tropical bears with fur markings so distinct, he can identify individuals without ever handling them.

Along with UM graduate student Robin Steenweg and biology professor Mark Hebblewhite, Brodie recently published a paper calling for a global network of remote cameras to transform the way we study and manage wildlife. Hebblewhite compared the idea to the process meteorologists used a century ago to link thousands of weather stations around the world and develop modern-day climate science.

“With a radio collar, you’re focused on that one animal,” Hebblewhite said. “Camera-trapping is different. We radio-collar space with a camera and see how the animals use that space. Land managers like the Forest Service and other state and federal agencies manage land – not just animals.”

The Western States Wolverine Conservation Program has raised about \$1 million to set up 180 bait stations in Montana, Wyoming, Idaho and Washington. The stations need nothing more than a tree big enough to dangle a hunk of roadkill meat defended by a line of wire bristle brushes. Any carnivore seeking a meal pays with a few body hairs. DNA analysis of those hairs reveals species, sex and sometimes family tree – all useful clues to display what animals use that bit of landscape.


Most of the stations also have camera traps on the watch. As techniques mature, those cameras might surpass the DNA work as a way of charting wildlife management.

“Even with hair snares, you still need to send someone every couple days,” Brodie said. “You don’t want the DNA material to degrade. With camera traps, you can wait for half a year without sending someone out. You get a sense of animal movements and behavior patterns. And it’s nice to not have humans out there every couple days.”

Because humans and their equipment are expensive. Hebblewhite said the bill to radio-collar two wolves in a recent project came to \$4,000 for the gear, helicopter time, tranquilizers and other supplies (but not the wages of the researchers). After the collar batteries expire or the collars fall off, the animal has to be recaptured to continue the project. A top-of-the-line camera trap costs \$500 and only needs an occasional new memory card and batteries to keep recording for season after season.

Hebblewhite and Brodie acknowledged there's a "creepy" aspect to having thousands of cameras in the woods watching everything that moves. But they added that existing projects such as Snapshot Serengeti and Snapshot Wisconsin have found ways to minimize the personal privacy problems while encouraging lots of citizen science.

"Conservation biology in general has been very bad about trying to measure our success," Brodie said. "If we talk to a business person or government agency, they do that every day. If they're not doing well, they change course. But how do you know how well you're doing in conservation? When we say we don't, their jaws drop. This is a way to show how well different conservation tactics work, how different management strategies work. It provides that baseline data, and it's cost-effective."

 Correction

The organization Swan Valley Connections was misidentified in earlier versions of this story.

Rob Chaney

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