

Origins of wolverine in California genetically verified

April 29 2009

A wolverine first photographed by a remote-controlled camera on the Tahoe National Forest in February 2008 is most closely related to Rocky Mountain populations, according to a team of 10 federal, state and university scientists.

Their findings are published in the latest edition of *Northwest Science* and focus on [genetic analysis](#) of hair collected from the first scientifically verified California wolverine in 86 years. The U.S. Forest Service funded the study, which demonstrated the first evidence of connectivity between wolverine populations living in the Rocky and Sierra Nevada Mountains.

Determining where the male wolverine originated is important because it is a state-threatened species, and California wolverines are genetically unique from other North American populations.

Last year, scientists collected hair and fecal samples from the photographed animal so that its DNA could be examined to help determine whether the wolverine had somehow survived as part of a historic population, escaped or was released from captivity, or dispersed on its own from outside of California.

Scientists at the agency's Wildlife Genetics Laboratory in Missoula, Mont., later found the animal was not part of a historic population by comparing its genetic samples with specimens found in California museums. These scientists previously used the specimens to learn

California wolverines are a distinct North American [genotype](#).

Further genetic analysis suggested the California wolverine most resembled a population comprised mostly of wolverines from Idaho, with a 73 percent confidence level. By comparison, the California wolverine had less than a five percent probability of belonging to most of the other North American wolverine populations evaluated.

The scientists also used carbon and nitrogen isotope analyses to support the genetic results in the study, which is titled "Wolverine Confirmation in California after Nearly a Century: Native or Long-Distance Immigrant?"

"We still can't be sure how this animal came to the Tahoe National Forest," said Bill Zielinski, one of the study's authors and a research ecologist at the Forest Service's Pacific Southwest Research Station. "But, this peer-reviewed study shows that other scientists agreed with our interpretation that it likely traveled here from the Rockies."

Zielinski said the photographed animal would have traveled more than 400 miles to reach the national forest if it naturally dispersed from the nearest Rocky Mountain population. He said if the wolverine was accidentally or deliberately transplanted, it would have more likely originated from an area where wolverines are more common and legally trapped, such as Alaska or the Yukon Territory.

Sierra Pacific Industries wildlife biologists also photographed the wolverine this winter using remote-controlled cameras on land it manages in California. Wildlife Genetics Laboratory scientists determined it to be the same wolverine photographed last year.

More information: The published study is available online at www.bioone.org/toc/nwsc/83/2 .

Source: US Forest Service

Citation: Origins of wolverine in California genetically verified (2009, April 29) retrieved 2 May 2024 from <https://phys.org/news/2009-04-wolverine-california-genetically.html>

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