

Elusive mammal at the heart of UC forest study

Six mornings a week, UC Berkeley wildlife biologist Rick Sweitzer boards a U.S. Forest Service Cessna 185 at the Mariposa Airport to fly circles above 320 square miles of forests along the southern border of Yosemite National Park.

Using a radio receiver, Sweitzer tracks the movements of 30 Pacific fishers -- diminutive, but ferocious carnivores that in the last year have been captured, sedated and fitted with small collars carrying radio transmitters. Related to the mink, otter and marten, fishers historically ranged throughout the mountainous West, from the southern Sierra into Canada. However, only two isolated populations remain today, one in the Sierra Nevada and one near the California-Oregon border.

"We don't know if the fisher population is continuing to decline, stabilizing or rebounding," Sweitzer said. "This study will help us understand the impact of forest management practices on the fisher population."

Data about the animals' movements, habitat preferences and survival will inform a group of agencies, academic institutions, environmental groups and mountain residents who are working together to hammer out plans for long-term wildland management that promotes forest health, wildfire control and wildlife protection. The University of California was enlisted to serve as a neutral party to assuage differences among participants of the diverse collaborative effort. In addition, UC researchers are conducting an array of scientific studies on fire and forest eco-system health, water management, and spotted owl and fisher protection.

Sweitzer is leading the fisher project in the Sierra Nevada. He and a staff of researchers based in Oakhurst pointed motion-detecting cameras at trees baited with road kill venison. When a fisher is photographed on the bait tree, a humane live trap containing a small chunk of venison is set. When they capture a fisher, the researchers attach a collar, then set the animal free.

"Our goal is to monitor 20 fishers at all times every month and every year of this project, which will go on for another seven years," Sweitzer said.

Many avid backpackers, anglers, campers and hikers have never seen the elusive fisher. The shy, nocturnal creature typically perches all day high in large, old-growth pine and oak trees where limbs have fallen off to create a cozy niche in the trunk. At night, the animals forage for squirrels and move from resting place to resting place -- sometimes traveling 15 miles within a few days. In the springtime, however, a pregnant female selects a den where she can stay a few months to give birth and tend to offspring.

From the airplane, Sweitzer uses aerial telemetry to pinpoint the daily movements of each of the collared animals. If a fisher has been inactive for 12 hours, the collar emits a rapid pulse, warning that the animal may have been separated from the collar or died.

On a recent October morning, Sweitzer picked up a warning pulse and within an hour and a half, a ground crew using a hand-held receiver found the animal; this time, the apparent victim of a larger carnivore.

"We will analyze DNA in the saliva (on the fisher's fur) to determine whether it was killed by a mountain lion, bobcat or coyote," Sweitzer said.

Over time, the researchers will be able to determine the major causes of fisher mortality. A key piece of the research project is monitoring how forest treatments affect the fishers' ability to survive. Scientists know that fishers prefer habitat with large, old-growth trees, closed canopies and downed limbs and brush that provide a haven for their prey. These characteristics, however, are not ideal for wildfire management.

The U.S. Forest Service is planning to cut down some of the trees and brush south of the community of Sugar Pine to reduce the risk that an uncontrollable, raging wildfire will approach the human-inhabited area. However, current laws require the Forest Service to leave a 700-acre untouched buffer around fisher denning sites. Under that law, the animals' now-documented tendency to move around a wide area makes almost any forest fire prevention treatment more difficult.

"We're in a conundrum," said Dave Martin, the Forest Service's district ranger for the Sierra National Forest Bass Lake Ranger District.

Kimberly Rodrigues, a UC administrator with an academic background in forestry, is facilitating meetings to help find a solution that is acceptable to the diversity of interests.

"We want to keep the issue out of the courts, out of litigation," Rodrigues said. "We want to give scientists the opportunity to study how the Forest Service's treatments might impact the Pacific fisher population."

The federal government considers fishers a "candidate species." The designation means there is uncertainty about the animals' long-term status, but there isn't sufficient information available to list the species under the Endangered Species Act.

"The number of the animals is low on the landscape," Sweitzer said. "That means, if you lose relatively few individual animals that may affect the overall viability of the population. As landscapes are modified, we may lose a few animals and that may tip the balance against the continued survival of fishers in this area."

To see a 1:22 video about the Pacific fisher, please visit the UC ANR website at:
<http://ucanr.org/spotlight/fisher.shtml>