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## Harmful chemicals endangering Pacific Fishers

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The Pacific Fisher, already a candidate for the Federal Endangered Species Act, is being harmed by harsh chemicals that are being placed in the forest by illegal growers. Funds are needed to help with reclamation of trash and chemical filled grow sites.

Special to Sierra Star

Chemicals associated with illegal grow sites harmful to wildlife; funds needed for forest cleanup

[Tiffany Tuell](#)

It's after law enforcement has finished a marijuana raid in the forest the High Sierra Volunteer Trail Crew comes in to clean up. The group has been working with the U.S. Forest Service since 1994 to clean up forests and has often worked locally. However this year they haven't been able to do any reclamation due to a lack of funds and because of that some items, such as chemical pesticides, remain at grow sites -- chemicals that are hazardous to forest wildlife and are harming already endangered Pacific Fishers.

The organizations executive director Shane Krogen is working with Mourad W. Gabriel, President of Integral

Ecology Research Center and Doctoral candidate at the University of California Davis. Together they are trying to educate funding organizations about issues the environment is faced with due to illegal grows in the forest. Krogen also wants to let the public know that it's not just about illegal marijuana grows.

"The story is about the environment, not the marijuana," Krogen said. "If they were growing corn out there and applying these chemicals it would be just as bad."

Because growers don't want animals disrupting their camp or their grow, they place chemical pesticides, or anticoagulant rodenticides (ARs), around their camps. Rodenticides are naturally bitter, so to make them attractive to wildlife they are filled with flavor emulsions to smell like sucrose, peanut butter, apples, cheese and bacon. When eaten, the Vitamin K antagonist in the chemicals disrupts blood clotting, causing animals to bleed internally, dying a slow and painful death. ARs are stored in the liver and brought out when the animal is under stress.

One particular animal that has been noticeably affected by ARs is the Pacific fisher, a small nocturnal carnivore, that is a candidate for the Federal Endangered Species Act. According to Gabriel's research, two California populations -- one in Northern California and one in the Sierra -- were looked at for exposure and 58 carcasses were tested for ARs. They found that 46 of 58 (79%) of fishers were exposed to an AR and 96% of those had been exposed to one or more second generation AR compounds. In the Sierra Nevada, 40 fishers were tested and 83% of them had been exposed.

There are two types of ARs. Second generation AR compounds are more toxic than first generation compounds. While first generation ARs require several doses to cause intoxication, second generation ARs require only a single dose to cause intoxication and persist in tissues according to Gabriel's research article.

Gabriel's study also showed AR contamination is not only clustered in certain areas, instead its contamination seems to be widespread in California forests and parks. Five fisher deaths have been directly linked to ARs with three more deaths looking "highly suspicious" according to Gabriel. One male fisher that died lost 72% of its blood due to AR compounds. Neonatal and milk transfer of ARs have also documented.

"In the middle of our national forests, this should not be a mortality factor," Gabriel said. "This is a human problem and we, as humans, can change it."

That is exactly what Krogen is trying to do through his brainchild -- High Sierra Volunteer Trail Crew. When he found out that it was possible to adopt a trail, just like a highway, he thought it would be a good idea for his sporting goods business. Krogen and some of his customers began cleaning up forest trails near Huntington Lake and the longer they did, the more projects they became involved in with and eventually that lead to marijuana reclamation. In 2004 his crews started out by clearing 12 grow sites. However, it was then they realized what it was really about.

"As the volunteers and I sat around in evening, we would sit back and say this isn't about marijuana, look at all that trash out there. And the more chemicals we found, we said this is not a good thing," Krogen said. "Once law enforcement leaves [a site] it's a free for all. Wildlife comes in and ... they taste test it all."

Krogen's crew is trying to prevent that from happening. However, crews do not just hike to a site without training. The forest service requires them to have training, so the crew goes through 13 aviation classes just to work around helicopters. At each grow site, they have a hazmat certified person on crew to assess the situation and quarantine chemicals. Afterwards, the rest of the crew is allowed to come in and do reclamation. They count everything they find, down to toothbrushes, and record it. They also cut the drip line, which irrigates the the grows, into 100 foot pieces and carry it out. Their goal is to remove the grow site's infrastructure, making it hard for growers to return.

They do most of their work in the wintertime when they know growers are no longer there. They are beginning to do more reclamation during the growing season, but when they do that they have to be accompanied by an armed officer. When the crew leaves a location, they not only want it to be for wildlife, they also want to make sure it's safe for the public by preventing those chemicals from entering the watershed.

Anne Lombardo, public participation representative to the Sierra Nevada Adaptive Management Project's southern research site, also voiced concerns about the possibility of these chemicals harming more than wildlife. A little

more than two years ago, her team was instrumental in rescuing five orphaned fishers in Madera County, raising them, then releasing them back into the forest.

"It (ARs) starts by affecting the long term survival of a rare and beautiful animal, the Pacific fisher," she said. "It moves on to endangering almost all the wildlife in the forest ... It continues on to concerns for the effects of rodenticides in our soils and waters. It is a blatant misuse of very powerful, dangerous substances on our public lands. It is the use and misuse of our resources by others for profit without our permission."

The High Sierra crew has cleaned up 335 sites in the Sierra National Forest and only has about 20 more sites to finish from last year and this year. Unfortunately they haven't been able to do any reclamation in the Sierra this year because they've run out of funding. Krogen hopes that, with the awareness he and Gabriel are trying to raise, they'll raise enough money to finish the work they've started.

"We live in the forest because we love what it is; free, safe, open space full of the wonders of nature, wildlife, fish, clear, safe drinking water and that is under secret attack," Lombardo said. "We are losing pieces of what we came here for without even realizing it. Oakhurst was lucky enough to have had some very diligent scientists studying in the area to have even identified the concern here. For the sake of the land and life style we cherish we should care. We are talking about public lands, land we all have a responsibility to."

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