Marijuana farms expose spotted owls to rat poison in Northwest California

11 January 2018, by Kat Kerlin

Northern spotted owl. Credit: J. Mark Higley/Hoopa Tribal Forestry

Wildlife species are being exposed to high levels of rat poison in northwest California, with illegal marijuana farms the most likely source point, according to a study led by the University of California, Davis, with the California Academy of Sciences.

The study, released Jan. 11 in the journal *Avian Conservation and Ecology*, showed that seven of the 10 northern spotted owls collected tested positive for rat poison, while 40 percent of 84 barred owls collected also tested positive for the poison.

The study is the first published account of anticoagulant rodenticide in northern spotted owls, which are listed as a threatened species under federal and state Endangered Species acts.

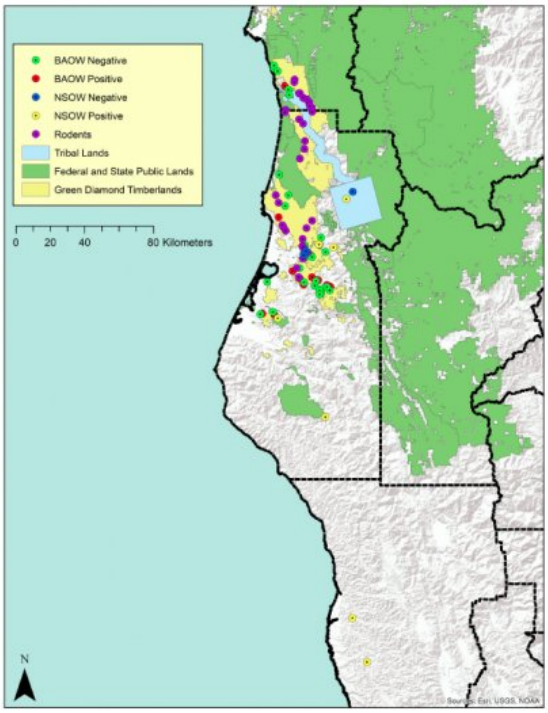
The study area encompasses Humboldt, Mendocino and Del Norte counties. It supports previous accounts that rat poison is contaminating the food web in this region, as the primary food source for owls—rodents—is being contaminated.

Timberland converting to marijuana farms

Driving the issue is the increasing conversion of private timberland into private, illegal and unpermitted marijuana cultivation sites. These sites often overlap with designated critical habitat for northern spotted owls, and the owls feed at their edges.

"Spotted owls are inclined to feed along forest edges. Because grow sites break apart these forest landscapes, they are likely source points for exposure," said lead author Mourad Gabriel, a research faculty member with the UC Davis Karen C. Drayer Wildlife Health Center within the School of Veterinary Medicine's One Health Institute. He's also executive director of nonprofit Integral Ecology Research Center.

Fig. 1. Collection locations for Northern Spotted Owls (NSO; *Strix occidentalis caurina*), Barred Owls (BO; *Strix varia*), and rodents and their anticoagulant rodenticide (AR) status in Northwestern California, USA. Positive NSO and BO are represented by yellow and red circles, respectively. The northern study area in Del Norte County and the southern study area in Humboldt County are delineated by dashed county lines.



Gabriel's studies in 2012, 2013 and 2015 were the first to link rat poison and illegal marijuana farms to the deaths of fishers, a weasel-like mammal living in remote forests of California and the Pacific Northwest, bringing broad attention to the issue.

Abundance of grow sites, lack of oversight

Proposition 64, which legalizes recreational marijuana in the state, took effect this month. With its arrival, resource managers expect the number and size of unpermitted, private cultivation sites to grow, which could exacerbate the problem.

The study authors note that an estimated 4,500 – 15,000 private cultivation sites are in Humboldt County alone, yet the county has seen legal permits for only a small fraction of them. That means there are thousands of unpermitted private grow sites with no management oversight.

"When you have thousands of unpermitted grows and only a handful of biologists that regulate that for multiple counties, we're deeply concerned that there aren't sufficient conservation protective measures in place," Gabriel said. "If no one is investigating the level at which private marijuana cultivators are placing chemicals out there, the fragmented forest landscapes created by these sites can serve as source points of exposure for owls and other wildlife."

Anticoagulant rodenticides inhibit the ability of mammals and birds to recycle vitamin K. This creates a series of clotting and coagulation problems, which can lead to uncontrollable internal bleeding.

Jack Dumbacher with the owl collection at the California Academy of Sciences. Credit: California Academy of Sciences

Barred owls and added stressors

Barred owls are a physically larger group of owls currently competing for resources and space in critical habitat designated for northern spotted owls. Forty percent, or 34 of 84, of the barred owl tissue samples collected for this study tested positive for anticoagulant rodenticide. The owls are being exposed through the prey they eat.

Environmental contamination, when coupled with ongoing competition from barred owls, poses an additional stressor on northern spotted owls, the study said. The fact that barred owls are contaminated as well shows that the species may be used as potential surrogates for detecting these contaminants in northern spotted owls.

"Access to these owl specimens allows us to explore the health of the entire regional forest system," says Jack Dumbacher, curator of Ornithology and Mammalogy at the California Academy of Sciences. "We're using our collections to build a concrete scientific case for increased forest monitoring and species protection before it's too late to intervene."

This study's researchers did not kill any owls for this study. Northern spotted owls were opportunistically collected when found dead in the

field, while barred owl tissue samples were provided by outside investigators conducting an unrelated barred-owl project.

Provided by UC Davis

APA citation: Marijuana farms expose spotted owls to rat poison in Northwest California (2018, January 11) retrieved 19 September 2020 from https://phys.org/news/2018-01-marijuana-farms-expose-owls-rat.html