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# POINT REYES LIGHT

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## Farallones poison plan goes to CCC

By Braden Cartwright  
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A plan to rid the South Farallon Islands of invasive house mice by dropping poison pellets is moving forward: On July 10, the California Coastal Commission will determine if the eradication plan, which targets the islands' only non-native species, is consistent with state law.

If the commission gives its approval, the United States Fish and Wildlife Service will issue a record of decision for the project, which could be implemented as soon as next year.

Under the plan, 1.45 tons of pellets that together carry just over an ounce of the anticoagulant rodenticide Brodifacoum would be dropped by helicopter twice over a period of two weeks. The target is one of the highest-density populations of house mice in the world, a species inadvertently brought to the island by ship in the 19th century.

"There's a lot of problems these house mice have created," said Doug Cordell, a spokesman for Fish and Wildlife. "You have to get every single mouse, otherwise the population comes back."

The South Farallon Islands, home to the largest seabird breeding colony in the contiguous United States, are a 120-acre string of rugged islands within the Farallon Islands National Wildlife Refuge. The refuge is closed to the public. Thirteen bird species, including half the world's population of the ash storm petrel, and five species of seals and sea lions can be found on the islands, located about 20 miles south of Point Reyes.

But Fish and Wildlife says an unchecked population of invasive mice is harming ash storm petrels by providing an abundant food source for burrowing owls, which also prey on the petrels. About 10 burrowing owls stay on the islands longer in the winter due to the supply of mice, and when the mouse population dips as part of a natural cycle, the owls turn to the petrels, a species the wildlife service considers rare but does not list as threatened or endangered.

The house mice also compete with the Farallon arboreal salamander—the islands' only native terrestrial vertebrate—for invertebrate prey such as the Farallon camel cricket. The mice may also feed on salamander juveniles or eggs, and they enable the spread of invasive plant species by consuming unique island plants, including the maritime goldfield.

"When an invasive species gets on an island, it just wreaks havoc," said Sally Esposito, a spokeswoman for Island Conservation, a non-profit that has partnered with the wildlife service on past research for the project. "We know this tool works because we've seen species recovering firsthand."

Yet ridding the islands of mice comes with the potential for both failure and harm. Seven percent of the attempts to eradicate house mice from islands between 2005 and 2015 worldwide failed to fully exterminate the invasive

population, according to Island Conservation. Other species can be harmed by the poison too, either by coming into contact with the dyed-green pellets or with a poisoned animal.

It takes one to several days for a mouse to die after ingesting the rodenticide.

Critics are concerned about impacts on the coastal ecosystems around the wildlife refuge, which is surrounded by the Greater Farallones National Marine Sanctuary.

“The pathways back to the mainland are too numerous to mention,” said Richard Charter, a critic of the plan and a senior fellow for the Ocean Foundation who is encouraging the public to send comments to the coastal commission. “[The plan] ignores the facts and the forces at work. It’s an idealized version of how nature can be controlled by man.”

The wildlife service announced its proposal to eradicate the house mice in 2006. In 2013, it released a draft environmental impact statement that laid out potential plans. Members of the public submitted 553 comments covering 39 different concerns in response to the draft; the service responded to those concerns in a final environmental impact statement released in March.

Public discussion of the plan has been low key, Mr. Cordell explained. “There really has not been a groundswell of opposition and vigorous antipathy to this date,” he said.

The poison pellets, containing 25 parts per million of the rodenticide, would be dropped twice, about two weeks apart, from a specialized bait bucket hung beneath a G.P.S.-guided helicopter. The drop zones would overlap to prevent gaps in coverage.

Bait deflectors that confine the drop to a 120-degree pattern and trickle buckets with narrow swaths would be used along the coastline to minimize contact with the water. Staff would hand-deliver bait to caves and the islands’ only two residences.

To avoid disturbing seals and sea lions during breeding season, the effort would be carried out in November, when the mice population is also low, although the timing brings the risk of coinciding with rain, which destroys the pellets.

In its 300-page environmental impact statement, Fish and Wildlife acknowledged the project would have short-term negative impacts to non-target wildlife on the island. “The use of Brodifacoum would negatively impact the natural quality by introducing a toxin that would remain present in the environment until it degrades after several months,” the report states.

Yet the wildlife service deemed the impacts “short-term and not significant,” saying the benefits of mouse eradication “offset the temporary adverse impacts to other aspects of wilderness character resulting in an overall beneficial impact on wilderness character.”

Although doses are not always lethal to birds, Western gulls would die, either from consuming pellets or preying on an exposed mouse, the report states. To keep the death rate below the threshold of a long-term impact, the wildlife service would attempt to keep gulls away from the island for five weeks, hoping to keep gull deaths below 1,700.

Researchers have already tested techniques for keeping the abundant gulls away. Lasers, effigies, pyrotechnics and audio broadcasts dispersed the birds from the islands during trials. Removing the gulls would also minimize the potential of the species eating too much bait, leaving an inadequate supply for the mice.

The service would also attempt to capture and hold raptors—including burrowing owls and peregrine falcons—until the pellets are no longer palatable to their prey. It would capture about 40 salamanders to ensure the subspecies’ survival. Although Farallon arboreal salamanders don’t find the grain pellets palatable, they could be exposed to the rodenticide by consuming insects that have eaten the bait. (The rodenticide isn’t toxic to insects.)

Personnel would record and collect visible animal carcasses and survey mainland beaches to collect any dead birds possibly exposed to rodenticide. If unanticipated deaths are recorded following the first bait application, “a

management decision on whether to proceed with subsequent bait applications would be made,” according to the environmental impact statement.

“This project would be safe and effective if we move forward with it, or we wouldn’t do it,” Mr. Cordell said. “Our only objective is to protect the wildlife and preserve the habitat. There’s no competing incentive.”

A bill introduced in the California State Assembly in February, dubbed the California Ecosystems Protection Act, would ban the use of anticoagulant in any state wildlife areas.

The bill, currently under review by the state senate’s natural resources and water committee, cites scientific research and state studies that have found rodenticides in over 75 percent of animals tested.

“These rodenticides lead to direct mortality and chronic long-term health impacts for natural predators, nontarget organisms, and endangered species and further steps are needed to reduce rodenticide exposure in nontarget animals,” the bill states.

*The final environmental impact statement can be found on the Fish and Wildlife Service’s Farallon Islands webpage. Comments on the project can be sent to the California Coastal Commission at [EORFC@coastal.ca.gov](mailto:EORFC@coastal.ca.gov) (<mailto:EORFC@coastal.ca.gov>).*