

INTERNAL VERSION

South Farallon Islands Restoration Project

Frequently Asked Questions

1. Where are the Farallon Islands?

The Farallon Islands comprise three groups of small islands located nearly 30 miles west of San Francisco, California. Southeast Farallon Island, part of the South Farallon Island group, is the largest island at 70 acres. This project will occur on the South Farallon Islands (120 acres total), since mice are not known to occur on the other island groups.

2. Why are the Farallon Islands so special?

The Farallon Islands (or, Farallones) host a unique ecosystem. Surrounded by the productive ocean waters of the Gulf of the Farallones, these islands host the largest seabird nesting colony in the contiguous United States, with 350,000 breeding birds of 13 species. The rare ash-throated storm-petrel, a species found almost entirely on the California coast, has its largest colony here. Thousands of seals and sea lions of five species utilize the islands for breeding and resting. The endemic Farallon arboreal salamander and Farallon camel cricket occur nowhere else. The Farallones host a unique plant community dominated by the maritime goldfield (also called Farallon weed), a species found only on seabird nesting islands in California and Oregon. Following a century and a half of wildlife exploitation and disturbance, the Farallon ecosystem is in a state of recovery.

3. Who manages the Farallon Islands?

In 1909, President Theodore Roosevelt established the Farallon National Wildlife Refuge as a preserve and breeding ground for marine birds. The Refuge originally encompassed only the North and Middle Farallon Islands and Noonday Rock. In 1969 the Refuge was expanded to include the South Farallon Islands. The Farallon Islands National Wildlife Refuge, as it was renamed in 2017, is one of seven National Wildlife Refuges in the San Francisco Bay National Wildlife Refuge Complex, and is just one of 550 refuges in the National Wildlife Refuge System. National Wildlife Refuges are managed by the U.S. Fish and Wildlife Service (the Service).

The islands are surrounded by a marine area that is designated a California State Marine Reserve (established in 2010) managed by the California Department of Fish and Wildlife and within the Greater Farallones National Marine Sanctuary (established in 1981) managed by the National Oceanic and Atmospheric Administration.

4. What is the South Farallon Islands Restoration Project?

The U.S. Fish and Wildlife Service and Point Blue Conservation Science have partnered to help restore the native ecosystem of the South Farallon Islands by removing invasive mice and eliminating their negative impacts.



Preventing Extinctions

The Service manages all of the Farallon Islands as part of its National Wildlife Refuge System. The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

Point Blue Conservation Science is dedicated to conserving birds, other wildlife, and ecosystems through innovative scientific research and outreach. Point Blue Conservation Science has been studying the wildlife of the South Farallon Islands since 1968.

5. How has the Project been funded?

Funds for developing the EIS have come from a variety of sources, including the Service, National Fish & Wildlife Foundation, Department of Interior Natural Resources Damage Assessment and Restoration funds, Point Blue Conservation Science, California Coastal Conservancy, Commonwealth Ocean Policy Program.

6. Does anyone live on the Farallon Islands?

A small, rotating contingent of researchers from Point Blue Conservation Science resides on Southeast Farallon Island year-round to monitor wildlife, take care of the facilities, and safeguard the islands. Refuge Managers from the U.S. Fish and Wildlife Service and other researchers also occasionally visit the islands. The refuge is closed to the public, but boat tours take passengers close enough to enjoy spectacular island landscapes, thousands of seabirds, seals, sea lions, and other marine life.

7. Why are introduced, invasive species such a big problem on islands?

Of the nearly 250 recorded animal extinctions since 1500, 80% have been on islands. When causes could be determined, non-native, invasive species were responsible for 54% of these island extinctions.

Island species are especially vulnerable to extinction because of their small populations and limited habitat. Furthermore, many island species have evolved in isolated environments with limited competition and an absence of native predators. These island species are adapted to ecosystems that are comparatively safer than most continental ecosystems, making them vulnerable to introduced, invasive species. Non-native species often quickly alter and damage the ecosystems to which they are introduced, both directly and indirectly, and cause native species to decline or even become extinct.

8. How and when were house mice introduced to the Farallon Islands?

House mice were introduced to the South Farallon Islands, probably accidentally, by human visitors well before the Service's acquisition of the islands in 1969. Among these early visitors were seal hunters, commercial egg collectors, lighthouse keepers, and the U.S. Navy. Many of the seals and seabirds have recovered significantly from the harvesting that occurred in the 19th century and large-scale human disturbance that finally ended with Refuge establishment. The invasive house mice remain, however, as a damaging legacy.



9. How many mice are on the South Farallon Islands?

The invasive house mouse population fluctuates seasonally and annually, but a recent sample of mouse density on Southeast Farallon Island suggests a preliminary density estimate of up to 1,270 mice per acre during certain times of the year. The population of mice on the Farallon Islands can reach plague levels and is among the highest mouse densities reported on any island worldwide. According to researchers on the island, the ground “moves” with mice.

10. How do mice harm the South Farallon Islands’ species and ecosystems?

Direct and indirect impacts from introduced mice harm populations of breeding seabirds on the islands, especially ashly storm-petrels, as well as Leach’s storm-petrels, native salamanders, crickets and other invertebrates, and native plants.

Ashly storm-petrels are harmed indirectly by the mice. The mice attract large numbers of burrowing owls, which stop at the islands to rest on their fall migration and find a plentiful food source when invasive mice are at a seasonal population peak. So instead of continuing on their migration, several owls remain on the islands through the winter to feed on the mice. This keeps them on the island long past the natural time for them to move on. But the mouse population crashes each winter, forcing the owls to seek other prey. The owls’ main choice is then the rare ashly storm-petrels, thereby reducing their population. The owls also feed extensively on rare Farallon camel crickets. Removing house mice from the South Farallon Islands would break this chain of events. With no mice to feed on, the visiting owls would continue on their southward migration instead of feeding on rare Farallon birds and crickets.

Mice also feed extensively on native invertebrates, reducing their populations, and compete for food with endemic Farallon arboreal salamanders. In addition, mice feed heavily on native plant seeds such as the maritime goldfield, reducing their populations in favor of more hardy non-native plants.

11. Purpose of the Project

The purpose of this project is to meet the Service’s management goal of eradicating invasive house mice from the Farallon Islands National Wildlife Refuge in order to eliminate their negative impacts on the native ecosystem of the South Farallon Islands. We expect that eradicating invasive mice will benefit native seabirds, amphibians, terrestrial invertebrates, plants, and wilderness quality, and will help restore natural ecosystem processes on the islands. The South Farallon Islands have sustained ecological damage over many decades from the presence of invasive mice. Eradicating house mice would eliminate the last remaining invasive vertebrate species on the Refuge, thereby enhancing the recovery of this unique and sensitive ecosystem.

12. How is the Service proposing to remove mice from the South Farallon Islands?

The Service conducted a thorough, science based EIS and came up with three alternatives to consider.

A) Alternatives being considered



- i. Alternative A: No Action, which would allow mice to remain on the South Farallon Islands and continue to negatively impact the islands' storm-petrels and other native and endemic species.
- ii. Alternative B (Preferred Alternative): Eradicate invasive house mice from the South Farallon Islands by aerial broadcast of rodent bait containing Brodifacoum-25D Conservation as the primary method of bait delivery.
- iii. Alternative C: Eradicate invasive house mice from the South Farallon Islands by aerial broadcast of rodent bait containing Diphacinone-50 Conservation as the primary method of bait delivery

B) Objectives

- i. The complete removal of invasive house mice from the South Farallon Islands using the best available methods;
- ii. Meet the Farallon NWR management and policy guidelines;
- iii. Minimize and mitigate any negative impact to the native species and other natural and cultural resources of the islands;
- iv. Ensure human safety is preserved during project implementation;
- v. Ensure that benefits of mouse removal outweigh any incidental negative effects from project implementation; and
- vi. Prevent the future reinvasion of house mice through implementation of a biosecurity plan.

C) Goals

- i. To increase the population sizes of ashly and Leach's storm-petrels;
- ii. To restore native ecosystem functions altered by invasive house mice;
- iii. To increase the abundance and recruitment of native vegetation;
- iv. To increase the productivity and abundance of endemic Farallon arboreal salamanders and endemic Farallon camel crickets and other native invertebrates;
- v. To improve the wilderness character of the Farallon Islands; and
- vi. To improve species and ecosystem adaptability and resilience in light of projected future climate change.

13. What other alternatives were considered and why were they dismissed?

To decide which action alternatives to include in the EIS, the Service conducted a detailed Alternatives Selection Process using information provided during the Public Scoping process, the scientific literature, and experts. In total, 49 different mouse removal methods were assessed including mechanical, theoretical, biological, and chemical methods. The methods included a sustained control program, the use of bait stations, hand broadcasting of bait, trapping, introduction of disease targeting the mice, introduction of a biological control agent such as snakes or cats, fertility control, and burrowing owl relocation. Alternatives were dismissed from detailed consideration if they did not meet most project objectives, did not meet safety and logistical requirements, or were not feasible to implement at this time. After a thorough assessment, all but two potential action alternatives were dismissed on various grounds.



The following is a brief explanation as to why all but two action alternatives were dismissed from full analysis.

A) Control as the Primary Method

On the Farallones, thousands of personnel hours would be required on an annual basis to sustain a control operation for mice. Activities associated with a control program would result in repeated disturbance to sensitive breeding seabirds, marine mammals, and habitats. If rodenticides were used as the control method, control operations would pose a low but ongoing risk to non-target wildlife from exposure to toxicants. Should the control operation be interrupted or ineffective, mice would quickly reproduce and rapidly re-populate the island reaching former population densities relatively quickly. A control effort, even if possible, would pose an ongoing safety risk to staff, have repeated impacts to native species, be less cost-effective, and would not generate the desired permanent island-wide conservation and restoration benefits to the native flora and fauna on the Refuge. Consequently, this alternative would not meet the project objective to eradicate mice from the Farallones, nor does it satisfy safety requirements.

B) Bait Stations as the Primary Method

The principal reasons that bait stations as the primary method are not being considered is due to the following: 1) many areas of the South Farallon Islands, because of the island's steep and rugged terrain, are simply inaccessible or pose a significant risk to personnel. As a consequence, targeting 100 percent of mouse territories could not be accomplished using this technique, which is a necessary prerequisite for a successful rodent eradication; 2) assuming access to all parts of the South Farallon Islands would be possible, bait stations would need to be deployed on a 20m x 20m grid and more than 1,200 bait stations would be required. Installing and maintaining more than 1,200 bait stations across the entire island for several months would require extensive effort and a considerable number of personnel. Maintaining such a large number of bait stations would likely cause large-scale, unacceptable impacts to nesting seabirds and their habitat, breeding and resting marine mammals, other sensitive species, and habitats on the islands. Consequently, this alternative would not meet the project objective to be technically feasible to implement, nor does it satisfy safety requirements. **Note: [Change above??] Following comments received on the Draft EIS, it was brought to our attention that spacing between bait stations should be 2 meters to 4 meters, not 20 meters. This would increase the number of bait stations needed by many fold, making bait stations as the primary method even more unfeasible.**

C) Hand Broadcasting Rodent Bait as the Primary Method

Reasons for not considering a hand broadcast operation as the primary bait delivery method are similar to those outlined for a bait station approach above. Access to all mouse territories is not possible or would put personnel at extreme risk because of the island's terrain. The method would pose the same risks to non-target species as an aerial application of rodent bait, would require extensive effort, and result in potentially

unacceptable impacts to island habitats and non-target species as a consequence of trampling and disturbance. There would also be increased risk of incomplete bait coverage, jeopardizing the chances of successfully eradicating the mice.

D) Trapping

Reasons for not considering trapping as the primary bait delivery method are similar to those outlined for a bait station approach above. Access to all mouse territories is not possible or would put personnel at extreme risk because of the island's terrain. The method would pose the same risks to non-target species as an aerial application of rodent bait, would require extensive effort and result in potentially unacceptable impacts to island habitats and non-target species as a consequence of trampling and disturbance. The use of live traps to remove mice from an area is also strong selection agent in favor of mice that are 'trap-shy'. Thus, after extensive trapping, mice that are wary of traps could remain and these mice would be very difficult to remove without the introduction of alternate methods such as toxicants.

E) Use of Disease

While there is ongoing research focused on the development of taxon-specific diseases that can control populations of invasive species, there are no pathogens presently available with proven efficacy at eradicating rodents. Even a highly lethal mouse-specific pathogen would likely be ineffective at removing mice, because the population would decline to a point where further transmission of disease between individuals was unlikely. As a result the introduced disease would likely disappear before fully infecting the entire mouse population. The introduction of novel diseases into the environment carries unknown risks to non-target species. Consequently, the use of disease would fail to meet project objectives to eradicate mice and minimize risk to non-target species.

F) Biological Control

The possibility of introducing a biological control agent for mice such as snakes and cats was dismissed because, as evidenced by other biological control programs, mice would be reduced, rather than fully eliminated as a consequence (Fagan et al. 2002). Additionally there are no known effective biological control agents for mice that would not result in irreparable damage to the South Farallon Islands environment. As illustrated by numerous examples, the introduction of a predator to the South Farallon Islands, such as cats or snakes, would result in significant impacts to seabirds (Atkinson 1985, Courchamp et al. 1999, 2000) likely overshadowing impacts of mice. Therefore, this alternative was eliminated from further consideration.

G) Fertility Control (Immuno-contraception and Genetic Mutation)

Fertility control has been used with limited success as a method of pest management for a few invasive species but has never been applied in an eradication setting. Experimental sterilization methods include chemicals and proteins delivered by vaccine, genetically-modified viral pathogens, and genetically modified mice that produce only males. However, the effectiveness of these experimental techniques in the wild, as well

as their impacts to non-target animals, is unknown. The lack of information and a history of success coupled with the extended time period (likely more than five years) required to trial and register the technology disqualified the use of fertility control from detailed consideration.

H) Burrowing Owl Relocation

The capture and translocation of wintering burrowing owls from the Farallon Islands was considered as a method to reduce owl predation on ashly storm-petrels. In the absence of mouse eradication, the relocation of burrowing owls would be expected to benefit ashly and Leach's storm-petrels on the South Farallon Islands. However, such a program would need to be continued in perpetuity to match the benefits of mouse eradication to storm-petrels. It is highly unlikely that such a program would be successful in the long-term. Also, relocation of burrowing owls would not eliminate the other ecosystem impacts of invasive house mice, such as those to the endemic Farallon camel cricket, endemic Farallon arboreal salamander, and native plants. Thus, burrowing owl translocation alone would not satisfy the purpose and need of the project. For this reason, the burrowing owl relocation alternative was dismissed from further consideration.

14. What is the current status of the project?

A) NEPA

The U.S. Fish & Wildlife Service is required to evaluate the environmental effects of this proposed project according to the guidelines for implementing the National Environmental Policy Act (NEPA). The NEPA process includes notifying other government agencies, private stakeholders, and the public of the proposed project and giving the opportunity for all to provide comments into the scope of the issues to be addressed in the environmental impact statement (EIS) and, later, to provide comments on the draft EIS.

The Service has completed its analyses and Final EIS, which was . The Notice of Availability for the Final EIS was published in the Federal Register on March 15, 2019. The Final EIS is available from [regulations.gov](https://www.regulations.gov), Docket No. FWS-R8-NWRS-2013-0036.

B) Planning process history/background

On April 13, 2011, the U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge Complex, published a Notice of Intent to prepare an EIS for the South Farallon Islands Non-native Mouse Eradication Project. Through June 10, 2011, the Service accepted written suggestions on the scope of the issues and concerns that should be addressed in the draft EIS, including the range of suitable alternatives, appropriate mitigation measures, and the nature and extent of potential environmental impacts. The draft EIS was issued August 2, 2013, and listed some proposed alternatives which are currently undergoing another round of public comment and review. The draft EIS presents a No Action alternative and two action alternatives for public review and comment. The DEIS was released for a 45-day public comment period that closed on September 30, 2013. A revised DEIS was issued on October 25, 2013 to clarify language so that it more

accurately reflects the scientific literature on the global population status of the rare Ashy storm-petrel. The public comment period for the Revised DEIS (RDEIS) closed on December 9, 2013.

15. What are the expected benefits of this project?

- i. Seabirds: Ashy and Leach's storm-petrels are expected to benefit as a consequence of reduced predation and improved survivorship. In particular, eradicating house mice is expected to reduce the numbers of overwintering burrowing owls and resulting owl predation on storm-petrels.
- ii. Salamanders: The endemic Farallon arboreal salamander is anticipated to benefit from the removal of a likely competitor for invertebrate prey and a potential predator of salamander eggs and juveniles.
- iii. Invertebrates: Native invertebrates of the South Farallon Islands, including the endemic Farallon camel cricket, are expected to benefit from reduced predation pressure from invasive mice and other predators attracted to the islands by the mice, such as burrowing owls.
- iv. Plants: Native plants stand to benefit as a consequence of reduced seed and seedling predation.

16. Why is it important to protect the Ashy Storm-Petrel?

The Ashy Storm-petrel is a small, grayish-brown nocturnal seabird. Its breeding range is limited to rocks and small islands off the coast of California, and northern Baja California, Mexico. Some experts estimate that there are only about 5,000-10,000 breeding ashy storm-petrels. Nearly half the world population breeds on the South Farallon Islands. The remainder nest on the Channel Islands off southern California and other small rocks and islands along the coast. They spend most of their time far at sea where they feed on small fish and invertebrates. Because of their secretive nature, they are rarely seen on land. However, in the fall months they congregate in large flocks at sea which are a favorite target of ocean birdwatching trips.

Because of their small world population and numerous threats, the species is listed as endangered by the International Union for Conservation of Nature (IUCN).

The U.S. Fish & Wildlife Service has identified the Ashy storm-petrel as a Bird Species of Conservation Concern and they listed as a Bird Species of Conservation Concern by the California Department of Fish and Wildlife. The species was recently petitioned for listing under the federal Endangered Species Act. Although listing was found to be not warranted at this time, the species is still at risk. Taking measures to reduce risks to the population, such as mouse eradication on the South Farallon Islands, will benefit ashy storm-petrels and help avoid future listing.

17. Aren't Burrowing Owls native to the South Farallon Islands, and therefore part of the natural ecosystem?



They are as visiting migrants. However, it is not natural for the owls to remain on the islands for extended periods of time, such as through the winter when they prey on storm-petrels. The presence of mice entices them to stay longer than they naturally would.

18. Is the Service certain that the owls will leave once the mice are gone?

The Service is confident that once mice are removed, most if not all burrowing owls landing on the South Farallones in the fall will continue on their migratory path and find more suitable wintering areas on the mainland, having found insufficient food resources on the islands.

All of the available data indicate that owls will not remain on the island once invasive mice have been removed. Predatory bird populations on the South Farallon Islands have been monitored by biologists from Point Blue Conservation Science since 1968. This long-term data shows that most birds of prey that do not eat mice, such as Sharp-shinned Hawks and Cooper's Hawks, do not over-winter on the Refuge even though they are occasionally present briefly during the fall migration period. In contrast, the mouse-eating Burrowing Owls have a much higher tendency to spend the winter on the South Farallones.

19. If a mouse removal alternative is selected, what native wildlife could be impacted from the rodenticide and what precautions would be taken to protect them from primary or secondary exposure to the bait from the removal operation?

The following describes the risk to these species and the measures proposed to mitigate the effects of the rodenticide.

A) Gulls

Gulls, especially western gulls, are at a high risk of either consuming bait pellets directly or consuming mice that have eaten bait, and could experience negative impacts from the rodenticide.

Research has already been conducted on how to protect gulls from rodenticide and the Service feels confident we can keep them away while the poison is in use. For this reason, the Service is proposing to conduct a gull hazing program to remove gulls from the island during the operation and for the duration of bait availability. In addition, the Service will remove any carcasses that are detected to further reduce the risk to gulls and other scavengers.

B) Raptors

Raptors, such as burrowing owls and peregrine falcons, could be at risk if they fed on exposed mice, gulls or invertebrates. For this reason, efforts would be made to capture, hold or translocate any raptors present on the islands for the duration of the eradication project.

C) Salamanders

Salamanders could be exposed to rodenticide by consuming insects that have eaten bait pellets. The threat to salamanders is expected to be low. However, because of the

uniqueness of the island population, a limited number of salamanders would be captured and held for the duration of the project as a precautionary measure.

20. Which species could be disturbed from hazing, helicopter use, and personnel activities and how will those impacts be mitigated?

Some disturbance to the island's wildlife and plant communities will occur as a result of project operations. Disturbance will occur as a result of helicopter broadcast of bait, gull hazing activities, and monitoring activities. However, the Service has designed mitigation measures to reduce the risk of disturbance. First and foremost, the eradication project would occur in the fall months, outside the breeding season for most species and when overall bird numbers are near an annual low.

The following describes the risk to vulnerable species and the measures proposed to mitigate the effects of disturbance.

A) Gulls

- i. Gulls, especially western gulls, are at a heightened risk of disturbance since they will be actively hazed off of the islands during operations to minimize their exposure to the rodenticide. Fortunately, the Farallon gull population spends much of its time away from the islands in the fall months. Those present in fall mainly visit the islands periodically to roost. Gulls hazed from the islands are expected to spend their time at mainland roosting locations, returning to the islands following the cessation of hazing activities well before the breeding season starts. Thus, disturbance is not expected to have any long-term effects on the Farallon gull population.

B) Raptors

- i. Raptors, such as Burrowing owls and Peregrine falcons, are at heightened risk of disturbance since they will be captured and either translocated to the mainland or held in captivity during the eradication period as a precautionary measure. This technique has been used effectively in other eradication projects. Disturbance impacts are not expected to have any long-term effects on these populations.

C) Seals and Sea Lions

- i. Seals and sea lions are at a heightened risk of short-term disturbance from bait application and gull hazing operations. The Service will work with marine mammal experts and permitting agencies to ascertain best management practices are used to minimize disturbance impacts. Results from extensive trials found that disturbance to seals and sea lions from gull hazing operations was relatively low and short-term, with no impacts to the numbers of animals utilizing the islands..

21. How could fish and the marine ecosystem be impacted, and what precautions would be taken to protect them from primary or secondary exposure to the bait from the removal operation?

Only the land surface of the islands, and not the marine environment, is targeted for bait application. Measures to reduce the risk of bait entering the marine environment include GPS precision guided flight paths and bait bucket. However, a small amount of bait could still inadvertently enter the marine environment immediately adjacent to the islands. Because bait pellets will disintegrate quickly upon entering the water and the rodenticide is not soluble in water, risks to marine wildlife and water quality are very low based on other eradication projects. Very few of the fish and marine invertebrate species living in the waters around the Farallon Islands would be expected to consume an encountered bait pellet. Studies have shown that most invertebrates are not impacted by anticoagulant rodenticides such as brodifacoum. Given these factors, the risk of exposure to rodenticide by marine fish and invertebrates would be limited to a small number of individuals, with no significant impacts to populations.

22. How long would the rodenticide bait be present in the environment?

Results of bait degradation trials undertaken on Southeast Farallon Island using non-toxic pellets, it is anticipated that Brodifacoum-25D Conservation bait would remain available and palatable for a period of about five weeks given normal rainfall patterns. The bait product proposed in Alternative C, Diphacinone-50 Conservation, is expected to last 15 weeks under normal rainfall conditions. However, either bait could degrade faster or slower depending on rainfall conditions.

23. Will there be any long-term negative effects from the eradication project?

Neither of the two mouse removal methods is expected to have any long-term negative effects on the species or ecosystems of the South Farallon Islands. Instead, the project is expected to benefit the native species, ecosystem and wilderness of the islands and to ensure that the long-term benefits outweigh the short-term incidental negative effects.

24. What experience does the Service have in restoring island habitats?

Since the Service began active stewardship of the South Farallon Islands in 1969, several restoration and enhancement measures have been implemented, including:

- Closing the Refuge to public access to protect wildlife and habitats.
- Designating all but Southeast Farallon Island as wilderness.
- Closing off sensitive areas to human access (including biologists).
- Removal of feral rabbits and cats from the islands in the 1970s, with the last of these invasive animals removed in 1974.
- Controlling introduced (non-native) flora.
- Installation of boardwalks to prevent trampling of sensitive habitat and limiting most human activities to only a few established trails.

- Minimizing night lighting and screening it from view so that nocturnal species are not disturbed.
- Removing unneeded structures to maximize natural habitat available to wildlife.
- Limiting the number of people allowed on the island at one time.
- Construction of the "Murre Ledge" to shield an expanding Common Murre colony from human disturbance, using materials from removed building foundations.
- Construction of artificial habitats for crevice nesting species, including ash storm-petrels, using the remains of removed building foundations.
- Rebuilding and maintaining rock walls that are used by crevice-nesting seabirds, including ash storm-petrels.

25. Have projects like this succeeded elsewhere?

Yes, invasive rodent removals have been successfully completed on nearly 700 islands worldwide, including on California's Anacapa Island in the Channel Islands National Park, three National Wildlife Refuges in the Pacific, two islands off the coast of Mexico, many islands off the main islands of New Zealand, and recently, multiple islands in the Galápagos Archipelago. Land managers have successfully eradicated house mice from more than 60 islands worldwide. Nearly all of these successful projects utilized techniques like that proposed for the South Farallon Islands house mouse eradication.

26. Isn't Brodifacoum the pesticide I heard about in the news that has been banned for sale and use in California?

Yes, brodifacoum has been in the news lately for its use in urban, residential, and agricultural areas. The US EPA recently banned the commercial and residential use of 12 different D-Con (brodifacoum) products, and the California Department of Pesticide Regulations (Cal DPR) is considering banning brodifacoum and other second generation anticoagulants from residential, urban, and agricultural use.

Neither the US EPA nor Cal DPR is considering banning brodifacoum for conservation actions on islands because of the long-term ecosystem benefits provided and the more controlled nature of the projects, conducted by skilled professionals employing measures to minimize risk to wildlife and plants.

27. What happens to the mice after they ingest bait?

The majority of mice are expected to enter burrows and die underground.

28. How many gulls will die?

Mitigation measures are planned to keep impacts to a level that will not significantly affect the breeding population of gulls.

29. How can someone learn more about the project?



More information about the Farallon Islands, the proposed project, and the NEPA process can be found at www.restorethefarallones.org.

