

## *Midway Seabird Protection Plan - Draft Environmental Assessment*

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# Midway Seabird Protection Plan – Draft Environmental Assessment

## Learn About the Emerging Threat



Welcome to Midway Atoll National Wildlife Refuge.



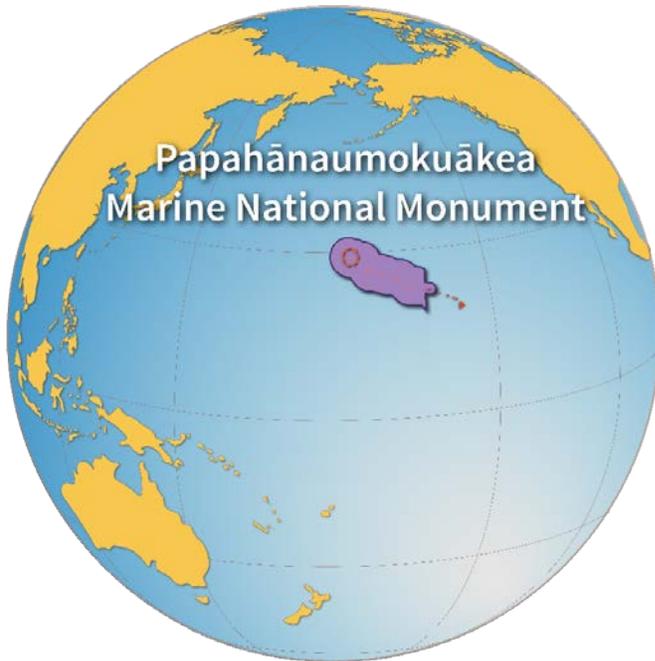
Midway Atoll is 1,200 miles northwest of Honolulu near the end of the Northwestern Hawaiian Islands.



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It is inside one of the largest protected areas in the world.



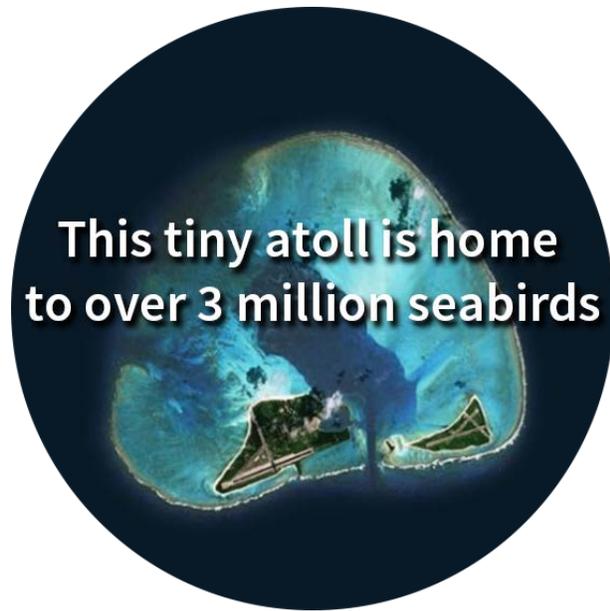
This tiny atoll is home to over 3 million seabirds.



And the world's largest colonies of Laysan and Black-footed albatross.

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But in 2015, a new threat emerged.



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*Warning: Some of the following content is disturbing and contains images of dead and wounded albatross.*

[Link to Video with Matt Brown](#)

Mice were attacking adult albatross as they sat on their nests - essentially eating the birds alive.



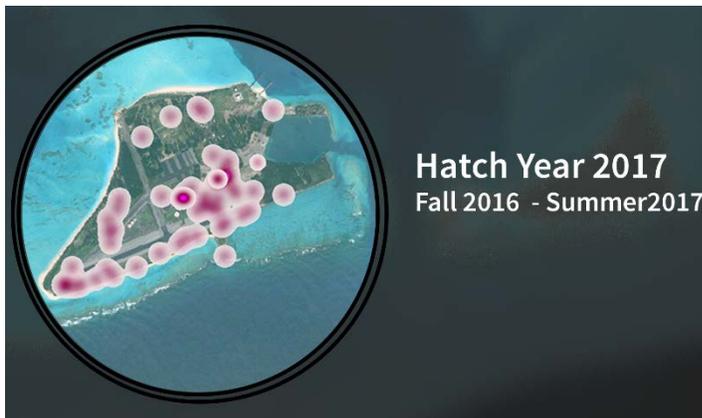
Nesting albatrosses are particularly vulnerable to attacks by mice because they refuse to abandon their egg.



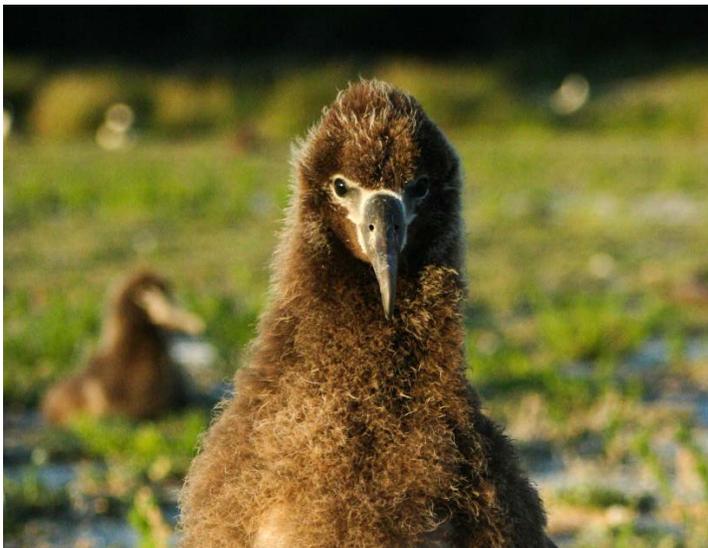
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Within two years the attacks had spread across the entire island.



The U.S. Fish and Wildlife Service is responsible for protecting the seabird colony on Midway Atoll.



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The U.S. Fish and Wildlife Service is responsible for protecting the seabird colony on Midway Atoll.

Learn more about our proposed plan by exploring the other tabs in this website. The complete Midway Seabird Protection Project Draft Environmental Assessment and information about submitting comments can be found in the Project Documentation section of this document.

### **Read About Our Proposed Action**

A Proposed Solution for Midway Atoll



The U.S. Fish and Wildlife Service is proposing to protect seabirds on Midway Atoll by completely removing the invasive house mouse from the Atoll.

This removal is necessary to protect the largest colony of albatross in the world as well as 29 other species of birds that rely on Midway Atoll.

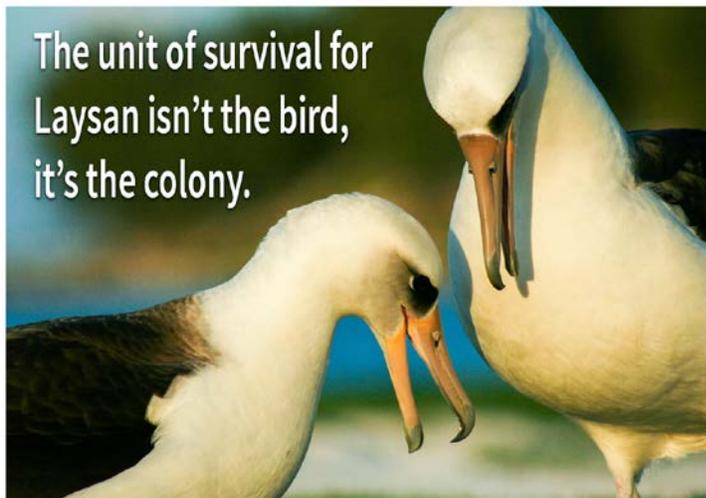
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Projects like this are pursued only when there is a serious problem where the long-term benefits outweigh any potential short-term risks; and they are always pursued in partnerships.

We will make a decision on this action with input from the public and in consultation and coordination with key government agencies.



On more than 500 other islands worldwide, similar invasive rodent removal campaigns have resulted in long-term benefits to native species and outweighed the limited, short-lived negative impacts from an eradication operation.

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For more information on the need for the proposed action, and our legislative and regulatory obligations to Midway Atoll, see Chapter 1 of the Draft Environmental Assessment.

For information on this Proposed Alternative see section 2.3 of the Draft Environmental Assessment.

### **Choosing the Right Tools**



The U.S. Fish and Wildlife Service is proposing to remove the invasive house mouse population from Midway Atoll using a variety of approaches and applications including the use of rodenticide, trapping, and prevention.

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Due to the varied topography and land use, as well as the significance of the protected species and ecosystems that can be found at Midway Atoll, there is no one single approach to carrying out this essential conservation mission.



Using the best biological assessments and drawing on decades of successful rodent eradications around the world, the Service is proposing multiple applications of rodenticide across the island in a way that minimizes the exposure to non-target species and has the highest chances of success.

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In the proposed plan, baited pellets containing small amounts of the rodenticide Brodifacoum 25D will be spread across much of the island from helicopters using a specially designed bait hopper.



In areas of human occupation, in historic or underground structures, on the airfield, and along sections of coastal fringe, alternate methods will be used including spreading the bait by hand, using bait boxes, and mechanical trapping.

The applications will be timed to have a minimal impact on species nesting or resting on the island and to have the maximum impact on the mice - at the end of a dry season when the mice are looking for food sources and the fewest number bird species are on the island.



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For more details on this proposed plan, as well as more explanation about why we selected this particular approach, see Chapter 2 of the Draft Environmental Assessment.

### **Explore Common Questions**

#### **Why are invasive house mice a problem on Midway Atoll?**



In 2015, invasive house mice on Midway Atoll began attacking adult albatross while the birds sat on their eggs. Albatross did not evolve in contact with mice and they are defenseless against them. Albatrosses' natural behavior - sitting on their egg for weeks at a time - leaves them particularly vulnerable to this emergent threat. In the first year, birds were killed (eaten alive) and nests abandoned in three areas on the island. The next year,

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the attacks, deaths, and nest abandonment spread across the entire island and increased exponentially.

Mice are not native to Midway Atoll or any of the islands of Papahānaumokuākea Marine National Monument. They arrived in the northwest Hawaiian islands - along with other invasive species like rats and rabbits - during military and commercial explorations of the 20th century. These invasive mammals have destroyed entire ecosystems and resulted in the loss of dozens of native species of plants and animals.

Nonnative and invasive mammals have been successfully removed throughout Papahānaumokuākea Marine National Monument with the exception of Midway Atoll National Wildlife Refuge. Restoring Midway Atoll's ecosystem by eradicating invasive species has been a long term conservation and planning objective for the U. S. Fish and Wildlife Service and Papahānaumokuākea Marine National Monument.

While mice can thrive in ecosystems and climates across the globe albatross are completely reliant on a dwindling number of isolated predator free islands for their long term survival. Midway Atoll is home to the largest albatross colony on the planet. The Service has determined that invasive house mice pose a real threat to the future of that colony, and as a result, the global Laysan albatross population as a whole.

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### **Isn't mouse predation a natural behavior?**



Mice are omnivores, meaning they will eat any readily available food source. It is undetermined what caused the mice to start preying on albatross as a food source, but it is not uncommon for mouse populations to change food sources as availability or climate shifts.

The attacks by the invasive mice that began in 2015 were the first ever documented cases of mice attacking and eating adult albatross, although attacks on chicks have been documented on other islands in the Pacific.

Regardless of what triggered this behavioral change in the invasive mouse population on Midway Atoll, this emergent learned behavior pattern could endanger the future of the world's largest albatross colony at any time. The proposed action is necessary to stop the spread of predation and protect the future of the albatross colony on Midway Atoll.

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Read more about the need for this proposed action in Chapter 1 of the Draft Environmental Assessment.

### **What is the proposed solution?**



The use of rodenticides to control or eliminate damaging invasive predators from islands has a forty year track record of data, successes, and lessons learned. As of 2015, there had been 944 documented attempts at rodent eradication by various agencies and organizations around the world. Rates of success for these efforts vary with climate, species, and method.

Generally success rates have been increasing over time as scientists and land managers learn from each project. Between 1975 and 2015, the overall success rate for mouse eradications is

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71%. Between 2005 and 2015, the success of house mouse eradications increased to 93.3% of 31 attempted eradications.

Read more about the principles and history of invasive rodent eradication in island ecosystems see section 2.1 of the Draft Environmental Assessment.

### **Has something like this been done successfully?**



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Generally success rates have been increasing over time as scientists and land managers learn from each project. Between 1975 and 2015, the overall success rate for mouse eradications is 71%. Between 2005 and 2015, the success of house mouse eradications increased to 93.3% of 31 attempted eradications.

Read more about the principles and history of invasive rodent eradication in island ecosystems see section 2.1 of the Draft Environmental Assessment.

### **Is there another way to protect seabirds on Midway?**



The U. S. Fish and Wildlife Service has evaluated a variety of approaches and determined that no other potential alternative adequately protects the seabird colony, minimizes long term risk to other species and humans, and fulfills our legislative and regulatory obligations on Midway Atoll.

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This determination is based on the best scientific understanding and decades of experience studying the impacts of invasive species to island ecosystems. The Service has determined that invasive house mice pose a real threat to the future of the seabird colony on Midway Atoll and that this proposed action is the best way to protect them.

### **What type of rodenticide is being considered?**



The Service is proposing to use Brodifacoum 25D Conservation. Brodifacoum 25D Conservation is a pelleted rodenticide bait for control or eradication of invasive rodents on islands. Brodifacoum 25D Conservation contains a specialized toxin that targets specific pathways in red-blooded mammals. The rodenticide would be distributed in 1 -2 gram cereal bait pellets containing 25

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parts-per-million (ppm) of brodifacoum. That concentration of rodenticide is similar to 24 grains of sugar in a 60 pound sack.

To read more about rodenticide and bait considerations for this proposed action see section 2.2.3 of the Draft Environmental Assessment.

### **Why will helicopters be used to apply the rodenticide bait?**



Spreading bait by hand, using bait stations, or relying on a combination of these approaches would be less effective and far more damaging to the environment. Hand application and bait stations would require hundreds of miles of new trails to be created across Midway Atoll through restored habitat and across large areas that are occupied by ground nesting and burrowing species of seabirds.

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Read more about bait distribution approaches and considerations in section 2.2.2 of the Draft Environmental Assessment.

### **Will this impact the World War II Memorials or historic structures?**



No. Midway Atoll is more than a protected National Wildlife Refuge, it is also designated as the Battle of Midway National Memorial. Midway Atoll has a long strategic and military history. During World War II, it was the site of one of the most important battles in U. S. Naval history, the Battle of Midway.

Today there are a number of World War II and Cold War era buildings in use by the staff and researchers, as well as contemporary memorials that honor the lives and courage of the service members who fought in the Battle of Midway. Those structures will not be impacted by this proposed action.

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You can read more about the Battle of Midway and explore the island and the memorials for yourself in the Explore More of Midway section of this website.

### **What are the risks to the marine environment and coral reefs?**



The proposed action has been designed to minimize the amount of bait or rodenticide that enters the waters around Midway Atoll. The application of rodenticide would take place in the summer dry season. This timing minimizes the chances of rain washing rodenticide into the ocean while maximizing the likelihood of success by targeting the mice when there is the least amount of food on the island and their population is already declining.

If inadvertent bait does drift into the nearshore waters, trials have shown that bait pellets dissolve quickly and the rodenticide would be diluted rapidly. The proposed bait contains 0.0025 %

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concentration of the rodenticide bound up in each 1 - 2 gram cereal pellet. That concentration of rodenticide is similar to 24 grains of sugar in a 60 pound sack. The rodenticide itself has extremely low solubility, meaning that it will stay bound to the microscopic bits of bait that do drift into the ocean or groundwater instead of dissolving into the water.

The majority of the coral reefs at Midway Atoll are located a significant distance from the shoreline where bait will be applied and so they are unlikely to be impacted. Furthermore, coral reefs do not have a blood based circulatory system; although there have been no trials showing the impacts of Brodifacoum 25D Conservation on coral reefs, there is no known mechanism for the brodifacoum to impact the coral.

For complete information on Affected environment, and environmental impacts and minimization measures see Chapter 3 of the Draft Environmental Assessment.

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### **Will this action affect species other than mice?**



It is likely that some species other than mice will be affected negatively by either the proposed application of rodenticide or the proposed methods of application by helicopter. The Service evaluated the species that use or reside on Midway Atoll and determined which ones are at risk for unintended poisoning or disturbance and what was the level of risk associated with each species.

Monitoring plans will be in place for species that the Service does not believe will be harmed at a population level and more specific protection plans will be developed for those species that have the potential to suffer substantial negative effects (For more information on impacts and protections for shorebirds on Midway Atoll see section 3.3.6.6. For information on impacts and

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protections for the Bristle-thighed curlew and the Laysan Duck see section 3.3.6.7 and section 3.3.6.8.)

While no impacts are expected for the endangered Hawaiian monk seal and the endangered Hawaiian green sea turtle the Service will closely monitor and control activity around those species. (Read more in sections 3.3.6.19 and 3.3.6.20 of the Draft Environmental Assessment.)

The greatest risk to the seabirds and the overall health of Midway Atoll is from doing nothing. The proposed action carries the least overall amount of risk when compared to the alternatives, and extensive measures are being taken to minimize the impacts to other species on the island. These protection measures will be documented in the Biological Opinion which will be completed under section 7 of the Endangered Species Act.

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### **How will you protect Midway's seabirds and shorebirds?**



The best long term protection for Midway's seabird and shorebird populations is to remove the threat of invasive mice. For this proposed action, the Service evaluated the potential impacts to the overall populations of each species and determined what mitigations - if any - would be appropriate.

Currently, Midway Atoll is a refuge for over 3 million seabirds. Because all of the seabirds on Midway are carnivores that forage at sea and not on the land they will not be vulnerable to actually consuming the bait. We are required to minimize the amount of bait that enters the near shore environment and that will also protect the seabird species that do occasionally feed in nearshore waters and might otherwise be poisoned secondarily by consuming a fish that had ingested a bait pellet. The primary

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mitigations proposed for minimizing ingestion of the bait by young albatrosses that might accidentally ingest a pellet during play will be to time the applications when their populations on Midway Atoll are at a minimum. While these monitoring and mitigation plans are at a minimum. While these monitoring and mitigation plans may not entirely prevent the loss of individual birds, they will protect against impacts to the overall populations. (For more information on impacts and protections for shorebirds on Midway Atoll see section 3.3.6.6.)

Most of the shorebirds that use Midway Atoll, represent a relatively small part of the global population, therefore, no population level impacts are anticipated to these species. However, due to their terrestrial foraging habits, all of the shorebird species on Midway will likely be harmed at the local level. For this reason, the Service is developing plans to protect shorebirds and other species of concern. The Laysan Duck and migratory shorebirds including the Bristle-thighed curlew, will have specific mitigation plans in place which we will implement to minimize their exposure to the rodenticide bait. (For information on impacts and protections for the Bristle-thighed curlew and the Laysan Duck see section 3.3.6.7 and section 3.3.6.8.)

During the NEPA review process, the Service will initiate consultation and species protected by law will have protection plans put into place prior to any final decision to implement the Seabird Protection project.

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### **Who is overseeing the project and what permits are required?**



The Service has coordinated with the Papahānaumokuākea Marine National Monument co-managers and worked with Island Conservation, American Bird Conservancy, National Fish and Wildlife Foundation, and other members of the conservation community in the synthesis and development of the science that contributed to the development of the draft environmental assessment. Monument co-managers include:

- U.S. Fish and Wildlife Service
- National Oceanographic and Atmospheric Agency (NOAA)
- Office of Hawaiian Affairs
- State of Hawai'i

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The U. S. Fish and Wildlife Service is the lead agency in the proposed action to protect the seabird colony on Midway Atoll. The USFWS is planning and would conduct the action with technical support from Island Conservation (IC) and the Midway Restoration Partnership Group. This group provides professional expertise relating to invasive species management on islands to benefit native and protected species and is made up of experts from the following agencies and organizations:

- U.S. Fish and Wildlife Service
- Island Conservation
- American Bird Conservancy
- U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS) National Wildlife Refuge Research Center
- National Oceanographic and Atmospheric Agency (NOAA)
- U.S. Geological Survey
- Office of Hawaiian Affairs

The U.S. Fish and Wildlife Service is conducting a National Environmental Policy Act (NEPA) review, and consultation under section 7 of the Endangered Species Act (ESA). The proposed action requires additional Federal coordination and permits . The EA may serve as the NEPA documentation for consultation, coordination or permits.

- National Environmental Policy Act (NEPA) Environmental Assessment
- Section 7, Endangered Species Act (ESA)
- Section 106, National Historic Preservation Act (NHPA)
- Essential Fish Habitat

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- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Supplemental Label
- National Pollutant Discharge Elimination System (NPDES) Permit
- Papahānaumokuākea Marine National Monument Permit

Additional compliance considerations can be found in Chapter 8 of the Draft Environmental Assessment.

### **How will you keep the mice from coming back?**



For decades, the U. S. Fish and Wildlife Service and our partners working in Papahānaumokuākea Marine National Monument have been successfully removing and preventing the reintroduction of invasive species.

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During that time, the Service has developed extensive biosecurity protocols to ensure that invasive species are not introduced or reintroduced into Papahānaumokuākea or any of the Northwest Hawaiian Islands.

The protocols cover all trips and travelers into and out of the monument and between islands in the monument and have proven to be effective over time. We will continue to employ these strict methods and ensure they are rigorously followed.

Read more about the Midway Atoll National Wildlife Refuge Biosecurity Plan in Appendix A of the Draft Environmental Assessment.

## **Read the Draft EA and Provide Comments**

### **Proposed Project Overview**

The proposed action to remove mice from Midway Atoll and the alternatives considered are evaluated in the following draft environmental assessment. The proposed action is to eradicate house mice from Sand Island in Midway Atoll, by delivering a lethal dose of a rodenticide to every rodent. This will involve the aerial and hand broadcast of Broadifacoum-25D Conservation, a pelleted rodenticide bait intended for conservation purposes for the control or eradication of invasive rodents on islands or vessels.

The proposed action would take place during the summer dry season, when mouse food sources are scarce and their population is typically declining. This will maximize the opportunity for mice to ingest the rodenticide.

The proposed action also includes protective measures that will help avoid or minimize any impacts to non-target species. For example, conducting the operation during the summer will minimize the risk of rain or wind washing bait pellets containing rodenticide into the ocean. Bait will not be aerially broadcast near the beaches or marine environment on Sand Island, minimizing the chance that it enters into the ocean or impacts marine species.

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Additionally, Broadifacoum-25D Conservation breaks down quickly in the marine environment.

Summer is also the time of year when relatively few migratory and shore birds are present – lessening the chance that they will be adversely impacted by the project. Seabirds eat at sea, not by foraging on the island and are not likely to be impacted by the treatment. However the proposed action would take place once the albatross and Bonin petrel nesting season has concluded, chicks have fledged, and before the next breeding season begins, minimizing the disturbance from the project to the colony.

The proposed action would take place with support from the Midway Restoration Partnership Group, which includes USFWS, Island Conservation, American Bird Conservancy, U.S. Department of Agriculture Animal and Plant Health Inspection Services National Wildlife Research Center, the National Oceanic and Atmospheric Administration, U.S. Geological Survey, and the State of Hawaii Office of Hawaiian Affairs.

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- Chapter 1 describes the purpose and need for the proposed action.
- Chapter 2 describes the proposed action and its alternatives in detail, including those alternatives that were initially considered but ultimately rejected from further evaluation.
- Chapter 3 provides information regarding the existing environment and identifies the kinds of environmental effects which each alternative is likely to have.
- Chapter 4 discusses the potential for cumulative effects.
- Chapter 5 lists the agencies, organizations, and individuals who prepared and contributed to this report.
- Chapter 6 provides the references for the information sources that were relied upon during preparation of this report.
- Chapter 7 describes the scoping process which was implemented during the planning process.
- Chapter 8 includes a statement of the project's consistency and compliance with relevant laws, EOs, agency policies and permits.
- Chapter 9 provides a glossary of terms.

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### **How to Submit Comments**

All relevant comments and information received by April 20, 2018, will be considered. Public comments on the draft EA can be submitted:

- Via email: [midwayEA\\_comments@fws.gov](mailto:midwayEA_comments@fws.gov); or
- Via mail to: Attn: Midway Draft EA Comments, Pacific Islands Refuges and Monuments Office, 300 Ala Moana Blvd., Room 5-231, Honolulu, HI, 96850.

### **Conservation Management Plans**

#### [Papahānaumokuākea Monument Management Plan \(PMMP\)](#)

The PMMP, completed in December 2008, was the result of an extensive public review process and identified 6 priority management needs, with supporting action plans and corresponding desired outcomes, for the PMNM. The 6 priorities were (PMMP, ES-3 to ES-5):

1. *Understanding and Interpreting the Northwestern Hawaiian Islands;*
2. *Conserving Wildlife and Habitats;*
3. *Reducing Threats to Monument Resources;*
4. *Managing Human Uses;*
5. *Coordinating Conservation and Management Activities; and*
6. *Achieving Effective Monument Operations.*

As evidenced by these priorities, protecting the land and waters of the NWHI from the impacts of alien species is critical to achieving the Monument's primary goal of resource protection. A specific component of Priority 3 was the development of an Alien Species Action Plan (ASAP). The ASAP advanced a series of strategies to address and mitigate the ongoing effects of invasive alien species on the PMNM. Specifically, the ASAP identified the eradication of the house mouse on Sand Island, MANWR as Strategy AS-4.

#### [Conservation Action Plan for Black-footed albatross and Laysan albatross](#)

In a multi-agency report on conservation action plans for the black-footed albatross and Laysan albatross (Naughton et al. 2007), the authors state that one of the primary threats to these 2 species is predation by introduced mammals. The authors recommended a conservation action to eradicate house mice from MANWR to protect these 2 species of seabirds.

#### [U.S. Fish and Wildlife Service Regional Seabird Conservation Plan](#)

## *Midway Seabird Protection Plan - Draft Environmental Assessment*

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In addition, the USFWS Regional Seabird Conservation Plan (USFWS 2005) identified the eradication or control of introduced predators and other invasive species that have a negative impact on seabirds as one of the top priorities for seabird conservation. They specifically recommend eradicating introduced predators in the Pacific Islands where the Laysan and Black-footed albatross breed or have historically bred.

### **Regulatory Requirements**

The proposed action of eradicating invasive mice on Sand Island, MANWR by the USFWS, Papahānaumokuākea Marine National Monument, constitutes a Federal action, which makes it subject to review under the National Environmental Protection Act (NEPA) and other applicable statutes, regulations, and EOs. USFWS is required to integrate and consider the potential environmental effects that its actions may have on the human and natural environment prior to taking action. It accomplishes this by evaluating the environmental consequences of proposals to ensure that environmental values are given appropriate consideration in agency decision-making along with economic and technical factors within the agency's mission.

This EA has been prepared in consultation with other agencies, private organizations, and the public. If, after circulating the report for public and agency comment, USFWS finds that the proposed project would not have a significant adverse effect on the quality of the environment, it would prepare a Finding of No Significant Impact (FONSI). Notification of the EA and FONSI will be available at: <https://www.papahanaumokuakea.gov>

If at any point in the preparation of an EA, USFWS determines that the proposal would have a significant adverse effect on the

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quality of the environment, it would initiate preparation of an Environmental Impact Statement (EIS).

The U.S. Fish and Wildlife Service is conducting a National Environmental Policy Act (NEPA) review, and consultation under section 7 of the Endangered Species Act (ESA).

The proposed action requires the following Federal permits.

- National Environmental Policy Act (NEPA) Environmental Assessment
- Section 7, Endangered Species Act (ESA)
- Essential Fish Habitat
- Section 106, National Historic Preservation Act (NHPA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Supplemental Label
- National Pollutant Discharge Elimination System (NPDES) Permit
- Papahānaumokuākea Marine National Monument Permit

*Additional compliance considerations can be found in Chapter 8 of the Draft Environmental Assessment.*