U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1845 Wasp Blvd., Bldg 176
Honolulu, Hawaii 96818
(808) 725-5000 · Fax: (808) 725-5215

Barry W. Steiglitz
Refuges and Monuments Supervisor
Pacific Islands Refuges and Monuments Office
300 Ala Moana Blvd., Room 5-231
PO Box 50167
Honolulu, HI 96850

April 20, 2018

Dear Mr. Steiglitz:

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) received the U.S. Fish and Wildlife Service's (USFWS) request to initiate consultation for the proposed Seabird Protection Project on March 21st 2017. The USFWS requested that their Environmental Assessment (EA), developed to satisfy the mandate for the National Environmental Policy Act, serve as a suitable "existing procedure" to satisfy the EFH provisions of the Magnuson-Stevens Fisheries Management and Conservation Act (Magnuson-Stevens Act) (50 C.F.R. § 600.905 – 930). NMFS has determined that USFWS' EA adequately provides the required information to support an EFH consultation; and NMFS appreciates this opportunity to provide the following comments to ensure that potential adverse effects to EFH are sufficiently avoided, minimized, offset for, or otherwise mitigated.

NMFS appreciates the extent to which the USFWS coordinated early on their proposed action. NMFS was first presented with the concept in October 2017, was welcomed at planning meetings, and was provided the opportunity to review and comment on two draft versions of the EA. Since initial concerns raised by NMFS were considerately and meaningfully addressed, and the effects analysis provided by USFWS is commensurate with the scale of the potential impacts, this consultation can be completed through abbreviated procedures.

Project Description

The proposed action is to eradicate house mice (*Mus musculus*) from Sand Island at Wake Atoll (1,128 acres) by delivering a lethal dose of rodenticide to every rodent in a manner that minimizes harm to island residents and the ecosystem. In 2015, mice were confirmed to be feeding on the backs and necks of adult albatross (listed as endangered under the Endangered Species Act) nesting

on Sand Island, leading to nest abandonment and mortality of adults, eggs and chicks. The toxicant proposed for use is Brodifacoum-25D Conservation, a pelleted rodenticide bait intended for the control or eradication of invasive rodents on islands for conservation purposes. Implementation of the proposed action is currently being considered for summer months in 2019. Beginning in July, three applications would be spaced out by 7-10 days each.

The USFWS is planning to conduct the action with technical support from Island Conservation and the Midway Restoration Partnership Group, which is a multidisciplinary stakeholder body including representatives from USFWS, Island Conservation, American Bird Conservancy, U.S. Department of Agriculture Animal and Plant Health Inspection Service National Wildlife Research Center, U.S. Geological Survey, and the State of Hawaii Office of Hawaiian Affairs, and NOAA.

Essential Fish Habitat

The marine water column from the surface to a depth of 1,000 meters (m) from shoreline to the outer boundary of the EEZ (200 miles), the seafloor from the shoreline out to a depth of 400 m, and outer reef sloped between 400 m -700 m around Sand Island, have been designated as EFH. As such, the water column and submerged bottom habitats of Sand Island are designated as EFH and support various life stages for the management unit species (MUS) identified under the Western Pacific Regional Fishery Management Council's Pelagic and Pacific Remote Island Areas Fishery Ecosystem Plans (FEPs). The MUS and life stages found in these waters include: eggs, larvae, juveniles, and adults of Coral Reef Ecosystem MUS (CRE-MUS); eggs, larvae, juveniles, and adults of Bottomfish MUS (BMUS); eggs, larvae, juveniles, and adults of Crustacean MUS (CMUS); and juveniles and adults of Pelagic MUS (PMUS). Specific types of habitat considered as EFH include coral reef, patch reefs, hard substrate, seagrass beds, soft substrate, mangrove, lagoon, estuarine, surge zone, deep-slope terraces and pelagic/open ocean. In addition, the marine portions of the Wake Atoll National Wildlife Refuge, which is overlaid by the Pacific Remote Islands Marine National Monument, is designated as a Habitat Area of Particular Concern (HAPC) for CRE-MUS, based on the rarity and ecological function of the habitat (and existing protected status).

Adverse Effects

The proposed rodent eradication activities are primarily land-based, since the targets are terrestrial. However, due to the need to apply rodenticide evenly throughout terrestrial acreage, it is expected that some bait will enter EFH, where it is expected to have adverse effects. Aerial broadcast applications of baited pellets will be supplemented with hand broadcasting along narrow coastlines, and with bait stations in commensal areas. These application methods are expected to be highly accurate, but are likely to introduce low amounts of the active compound, Brodifacoum-25D, into the marine environment.

Bait pellets can be ingested by various fishery species, and Brodifacoum-25D disrupts the blood coagulation mechanism of the immune system in vertebrates, leading to mortality of vertebrate species (e.g., fish). The rodenticide is not expected to affect invertebrates in a similar manner, but may have other adverse effects that are not well researched. Adverse effects also include impacts to the prey base of MUS, which have the potential to magnify adverse effects to cryptic and small organisms through trophic relationships.

Baited pellets are expected to dissolve rapidly, although Brodifacoum-25D is expected to bind tightly to sediment particles. Brodifacoum-25D is expected to remain active for six months, which presents the risk of secondary exposure by sessile benthic organisms, mobile benthic invertebrates, and bottom feeding organisms. The feeding behavior of potentially affected species becomes relevant when identifying risk of exposure. For example, mullet species are benthopelagic and goatfish feed on infauna, while crustaceans and sea cucumber contact the benthos as a means of locomotion, and sessile organisms are subjected to the compounds and sediments that settle on them. In addition, since baited pellets dissolve rapidly, there is potential that Brodifacoum-25D could enter the groundwater and indirectly discharge into the marine environment over time.

Conservation Measures and Best Management Practices
Adverse effects to EFH will be minimized through a variety of Best Management Practices (BMPs) and other measures that will decrease the likelihood of adverse effects, and reduce the prevalence of adverse effects. These measures are fully described in the EA, and include: (1) identification of areas where the coastline is narrow or where logistics reduce the accuracy of aerial applications and hand broadcast bait in those locations to reduce non-target exposure in the marine environment; (2) helicopter navigation systems will be used to optimize the accuracy and height of baited pellet applications, and thresholds will be set for acceptable weather parameters (e.g., wind speed and precipitation).

In order to reduce uncertainty with non-target exposure to Brodifacoum-25D, the USFWS is collaborating with Dr. Robert Richmond at the University of Hawaii Kewalo Marine Laboratory to conduct *ex situ* Brodifacoum-25D exposure experiments on corals and will implement follow-up monitoring and sample evaluation to document *in situ* effects.

Risk of exposure through groundwater contamination is expected to be unlikely based on the binding properties of Brodifacoum-25D and the relatively long residence time of groundwater before it is discharged (i.e., 30 to 50 years for groundwater to migrate from the center of the island to either shore).

EFH Determination and Conservation Recommendations
NMFS agrees with the USFWS determination (EA, page 3-92) that the proposed action would likely have some adverse effects on essential fish habitat, but those effects would be minor and temporary, as long as BMPs are effectively implemented as described throughout the EA. It is currently assumed that adverse effects to corals will be minimal, and this assumption will be tested before the project is implemented. However, NMFS offers the following conservation recommendations to USFWS pursuant to 50 CFR 600.920, so that potential adverse effects from proposed project activities are avoided, minimized, offset or otherwise mitigated for.

Conservation Recommendation 1: USFWS should provide NMFS with a copy of the results and conclusions from the coral exposure experiments being conducted, and reinitiate consultation with NMFS if conclusions indicate that adverse effects have the potential to cause mortality, or other long-term adverse effects, to corals.

Conservation Recommendation 2: USFWS should provide NMFS with documentation of any mortality or stress responses that are observed in follow-up monitoring that result from the project activities; and implement measures to offset the lost ecosystem services and/or functions.

Summary of NMFS Position

NMFS agrees with the USFWS determination of adverse effects to EFH, and that it is supported by the best available scientific information. However, we look forward to reducing uncertainty through *ex situ* experiments before the project activities are implemented. NMFS recognizes the importance of eliminating the threat of depredation to endangered species by invasive species. NMFS greatly appreciates the USFWS's efforts to coordinate with NMFS throughout the development of their EA, and to reduce adverse effects to EFH, to the greatest extent possible, while moving forward with the needed action. NMFS values our positive working relationship and a shared desire for conserving habitat effectively in support of sustainable fisheries. Please don't hesitate to contact Ian Lundgren at 808-725-5088 and/or ian.lundgren@noaa.gov with any questions or to request further technical assistance.

Sincerely,

Gerry Davis
Assistant Regional Administrator
Habitat Conservation Division

cc by e-mail:
Mike Marxen, USFWS
Beth Flint, USFWS
Malia Chow, NMFS