State of Hawai'i
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Aquatic Resources
Honolulu, Hawai'i 96813

June 23, 2017

Board of Land and Natural Resources
Honolulu, Hawai'i

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National Monument Conservation and Management Permit to Dr. Erin Oleson and Dr. Jeff Moore, NOAA Fisheries, Pacific Islands Fisheries Science Center, for Access to State Waters to Conduct Cetacean Assessment Activities

The Division of Aquatic Resources (DAR) hereby submits a request for your authorization and approval for issuance of a Papahānaumokuākea Marine National Monument research permit to Dr. Charles Littnan, Lead Scientist, Hawaiian Monk Seal Research Program, NOAA, pursuant to § 187A-6, Hawai'i Revised Statutes (HRS), Chapter 13-60.5, Hawai'i Administrative Rules (HAR), and all other applicable laws and regulations.

The Conservation and Management permit, as described below, would allow entry and activities to occur in Papahānaumokuākea Marine National Monument, including the NWHI State Marine Refuge and the waters (0-3 nautical miles) surrounding the following sites:

- Nihoa Island
- Mokumanamana Island
- French Frigate Shoals
- Gardner Pinnacles
- Maro Reef
- Laysan Island
- Lisianski Island
- Pearl and Hermes Atoll
- Midway Atoll
- Kure Atoll

The activities covered under this permit would occur between July 1, 2017 and June 30, 2018. The proposed activities are a renewal of work previously permitted and conducted in the Monument.

INTENDED ACTIVITIES

The Applicants, Dr. Erin Oleson and Dr. Jeff Moore, propose to conduct Hawaiian Islands Cetacean and Ecosystem Assessment Survey (HICEAS) of the Hawaiian archipelago consisting of activities previously covered under the Managers permit. The HICEAS would estimate the abundance and distribution of cetaceans within the Hawaiian exclusive economic zone (EEZ) using visual and acoustic methods. They also would concurrently conduct ecosystem assessments of cetacean

habitat. The applicant would access the Monument on two separately permitted NOAA vessels to conduct activities throughout the Monument.

Proposed activities that would be undertaken would include: collection of visual and passive acoustic encounters to estimate cetacean abundances; collection of tissue samples to determine population structures and contaminant levels; photographing individuals encountered to evaluate population sizes and general health conditions; deployment of satellite telemetry tags and acoustic recorders to evaluate population movement and range; and collection of oceanographic data to assess the habitat in the study area.

Methods that will be employed for the above activities will include:

- Line transect surveys by the NOAA ships to collect abundance data.
- Towing of passive hydrophones to record vocalizations to help in abundance estimates, and deployment of two sonobuoys during CTD casts or when larger whales are spotted.
- Taking biopsy tissue samples using a crossbow.
- Deploying satellite tags using a small tender vessel and a tagging rifle to implant the tag.
- Performing aerial surveys using a hexacopter to collect video of certain encounters.
- Opportunistic collection of body parts from dead or stranded animals encountered during the cruise.
- Collection of oceanographic data using up to four expendable bathythermograph per day, continuous use of a thermosalinograph, and morning and/or evening CTD casts.
- Collection of fish and squid using hook-and-line gear.
- Recovery and redeployment of a HARP at Pearl and Hermes.
- Deployment and recovery of Drifting Spar Buoy Recorders which will be collected after 20-30 days of operation.

This activity directly supports the Threatened and Endangered Species (TES) Action Plan Strategy TES-2.1: *Determine the stats of cetacean populations and verify and manage potential threats over the life of the plan.* (PMNM MMP Vol. 1, 2008).

REVIEW PROCESS:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai'i Division of Aquatic Resources, Hawai'i Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application has been posted on the Monument Web site since May 17, 2017 giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

Comments received from the scientific community are summarized as follows:

QUESTIONS:

1. Is the towed array mentioned in Question 8 (Methods), bullet b, on page 11 the same as the tetrahedral array mentioned in Question 12 (page 15)? If not, please provide a detailed description on what the tetrahedral array is and how it will be used?

The tetrahedral array is a component of the towed array system. Our standard towed hydrophone array is linear. The array consists of ~300m of conducting cable extending behind the ship (the 'tow cable'), which is then connected to a section of tubing containing 3 hydrophones (the 'inline array'), followed by a 20-30m section of conducting cable ('the 'baseline'), then finally to a another section of tubing containing 3 hydrophones (the 'end array'). (see diagram below) The tetrahedral array (pictured) can be incorporated into the array system by replacing the inline array with the tetrahedral array.

The tetrahedral array is approximately1m long and 0.5m diameter, and consist of 4 hydrophones and an accelerometer. The hydrophones are arranged so that at least 2 are outside of the linear plane, therefore allowing for 3-D localization of a sound source. The accelerometer provides orientation information for the tetrahedral components so that the source location is accurate with respect to the horizon.

2. Will sonobuoys be retrieved after use? If so, how will they be tracked if out of line of sight, via satellite, and how long will sonobuoys be deployed before retrieval?

Sonobuoys are not designed for retrieval and will not be retrieved as part of HICEAS.

3. Are there any safeguards for ensuring that free floating and unattended sonobuoys do not contact shallow coral reefs or wash up on land?

Sonobuoys will be programmed to scuttle after 2 hours of data transmission to avoid the possibility of washing up on shore while still afloat. Sonobuoys will not be used within 3 mi of any landmass.

4. In Question 7 Finding d, three ESA permits are listed. Could the applicant provide a copy of permit # 19091 (turtle research) and also give a status update on permit #20311 which is mentioned as being a pending renewal?

Permit 20311 was released yesterday in the Federal Register for public comment (FR 22498). Public comments are requested by June 15. The permit has already undergone ESA Section 7 review. The NMFS permit office anticipates issuing the permit 20311 by July 1, 2017.

5. To what depth will the HARP be redeployed? What safeguards are in place to ensure that the anchor does not damage live coral or sensitive seafloor?

The HARP will deployed to a depth of approximately 900m. We have previously surveyed the deployment site via 12kHz echosounder to assess bottom topography and have chosen a flat location devoid of significant relief, such as coral heads. We have deployed the HARP at this same location (previously and currently permitted under the NMFS Mangers permit) and attempt to keep new deployments as close to prior deployment locations as possible (within 50m) to avoid damaging any neighboring structures.

6. Are there any safeguards for ensuring that free floating and unattended DASBRs do not contact shallow coral reefs or wash up on land?

DASBRs will be tracked via Iridium satellite transponders providing location information every 2 hours (or more frequently as needed). We will may be approaching land (<5 mi from shore) or being carried far out of the study area by prevailing currents.

7. Will best practices be performed for vessel approach?

We will work in accordance with our ESA/MMPA take permit that allows for approach of cetaceans for photo-ID, biopsy sampling, and satellite tagging.

8. What safeguards will be in place to prevent bycatch of other species?

Our study design is highly targeted at our study species, such that there is very low likely of bycatch. All sampling activities will be directed at the permitted species.

9. What is the maximum number of animals that biopsies will be taken from?

Please refer to our ESA/MMPA take permit provided with the application, as it provides maximum take allowance for each species.

10. Are satellite tags suction cup or penetrating tags? Also, how long will they be on the animals and what is the disposition?

Satellite tags are attached with 2 titanium darts to the dorsal fin of the dolphin. For small odonotoctes (typically < 8.5') we use 3cm darts, for larger cetaceans we typically use 6cm darts. Tags and darts have been designed to minimize drag and and therefore allow for longer duration deployments. Deployments on small odontocetes typically last 5-30 days. Deployments on larger odontocetes typically last 30-100 days. We will be primarily targeting false killer whales and short-finned pilot whales for satellite tagging and have achieved long (up to 235 days) tag durations on these species with 6cm darts.

11. Are there any safeguards for sterilizing equipment that come in direct contact with multiple animals (to avoid spreading disease)?

The only equipment with the potential to contact more than one animal is a biopsy dart. Biopsy tips are washed with soap and water, then sterilized with isopropyl and acetone before each use.

12. Will the MMB be notified if marine mammals have been salvaged from monument waters?

Yes, we will notify MMB of any marine mammals salvaged in the PMNM.

13. If marine mammal parts are salvaged in any area, can they be made available to Native Hawaiian cultural practitioners for use? How can OHA help to facilitate this process?

We are happy to discuss this further as these cases arise. Salvaged marine mammal parts are still subject to ESA and MMPA restrictions and their disposition is governed by permit. Release of parts would require discussion with our permitting authority.

COMMENTS: NONE.

Comments received from the Native Hawaiian community are summarized as follows:

Cultural reviews support the acceptance of this application. No concerns were raised.

Comments received from the public are summarized as follows:

No comments were received from the public on this application.

Additional reviews and permit history:

Are there other relevant/necessary permits or environmental reviews that have or will be issued with regard to this project? (e.g. MMPA, ESA, EA) Yes ☒ No ☐
If so, please list or explain:

- The proposed activities are in compliance with the National Environmental Policy Act. Programmatic Environmental Assessment (PEA) of the National Marine Fisheries Service (NMFS) Pacific Island Fisheries Science Center (PIFSC) May 2012, and associated Finding of No Significant Impact.

- A National Marine Fisheries Service issued Marine Mammal Protection Act (MMPA) Permit No. 15240 was issued to the Pacific Island Fisheries Science Center for research activities on marine Mammals on May 15, 2012.

- A National Marine Fisheries Service issued Endangered Species Act (ESA) Permit No. 19091 was issued to the Southwest Fisheries Science Center for research activities on marine Mammals and sea turtles on May 17, 2016.

- Permit 20311 was released May 16, 2017 in the Federal Register for public comment (FR 22498). Public comments are requested by June 15. The permit has already undergone ESA Section 7 review. The NMFS permit office anticipates issuing the permit 20311 by July 1, 2017.
- The proposed activities are in compliance with the National Environmental Policy Act and HRS chapter 343. The Final Environmental Assessment covering the subject activity was published in OEQC's The Environmental Notice on December 23, 2008 with a finding of no significant impact (FONSI).
- Additionally, The Department has made an exemption determination for this permit in accordance chapter 343, HRS, and Chapter 11-200, HAR. See Attachment ("DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT CONSERVATION AND MANAGEMENT PERMIT TO DR. ERIN OLESON AND DR. JEFF MOORE, NOAA FISHERIES, PACIFIC ISLANDS FISHERIES SCIENCE CENTER, FOR ACCESS TO STATE WATERS TO CONDUCT MARINE MAMMAL ACTIVITIES UNDER PERMIT PMNM-2017-017")

Has Applicant been granted a permit from the State in the past? Yes ☒ No ☐
If so, please summarize past permits:

- The Applicant (NOAA) was granted a permit to conduct similar activities each year under the PMNM-001 to conduct cetacean assessments.

Have there been any a) violations: Yes ☐ No ☒
b) Late/incomplete post-activity reports: Yes ☐ No ☒

Are there any other relevant concerns from previous permits? Yes ☐ No ☒

STAFF OPINION:

PMNM staff is of the opinion that Applicant has properly demonstrated valid justifications for his application and should be allowed to enter the NWHI State waters and to conduct the activities therein as specified in the application with certain special instructions and conditions, which are in addition to the Papahānaumokuākea Marine National Monument Research Permit General Conditions. All suggested special conditions have been vetted through the legal counsel of the Co-Trustee agencies (see Recommendation section).

MONUMENT MANAGEMENT BOARD OPINION:
The MMB has not yet provided endorsement for this amendment action. This is a product of process timeframes and not necessary a result of any concern with the proposed amendment itself. A verbal update will be provided at the time of the BLNR hearing.

RECOMMENDATION:
That the Board authorize and approve a Conservation and Management Permit to Dr. Erin Oleson and Dr. Jeff Moore, NOAA Fisheries, with the following special conditions:

1. That the Board declare that the actions which are anticipated to be undertaken under this permit will have little or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment.

2. Upon the finding and adoption of the department's analysis by the Board, that the Board delegate and authorize the Chairperson to sign the declaration of exemption for purposes of recordkeeping requirements of chapter 343, HRS, and chapter 11-200, HAR.

3. That the permittee provide, to the best extant possible, a summary of their Monument access, including, but not limited to, any initial findings to the DLNR for use at educational institutions and outreach events.

4. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.

5. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.

6. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocol attached to this permit.

7. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.

8. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State Marine Refuge.

9. No fishing is allowed in State Waters except as authorized under State law for subsistence, traditional and customary practices by Native Hawaiians.

Respectfully submitted,

Maria Carnevale
Papahānaumokuākea Marine National Monument

APPROVED FOR SUBMITTAL

SUZANNE CASE
Chairperson

Papahānaumokuākea Marine National Monument

CONSERVATION AND MANAGEMENT Permit Application

NOTE: ***This Permit Application (and associated Instructions) are to propose activities to be conducted in the Papahānaumokuākea Marine National Monument. The Co-Trustees are required to determine that issuing the requested permit is compatible with the findings of Presidential Proclamation 8031. Within this Application, provide all information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Papahānaumokuākea Marine National Monument (Monument).***

ADDITIONAL IMPORTANT INFORMATION:

- Any or all of the information within this application may be posted to the Monument website informing the public on projects proposed to occur in the Monument.

- In addition to the permit application, the Applicant must either download the Monument Compliance Information Sheet from the Monument website OR request a hard copy from the Monument Permit Coordinator (contact information below). The Monument Compliance Information Sheet must be submitted to the Monument Permit Coordinator after initial application consultation.

- Issuance of a Monument permit is dependent upon the completion and review of the application and Compliance Information Sheet.

INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED

Send Permit Applications to:
NOAA/Inouye Regional Center
NOS/ONMS/PMNM/Attn: Permit Coordinator
1845 Wasp Blvd, Building 176
Honolulu, HI 96818
nwhipermit@noaa.gov
PHONE: (808) 725-5800 FAX: (808) 455-3093

SUBMITTAL VIA ELECTRONIC MAIL IS PREFERRED BUT NOT REQUIRED. FOR ADDITIONAL SUBMITTAL INSTRUCTIONS, SEE THE LAST PAGE.

Papahānaumokuākea Marine National Monument
Permit Application Cover Sheet

This Permit Application Cover Sheet is intended to provide summary information and status to the public on permit applications for activities proposed to be conducted in the Papahānaumokuākea Marine National Monument. While a permit application has been received, it has not been fully reviewed nor approved by the Monument Management Board to date. The Monument permit process also ensures that all environmental reviews are conducted prior to the issuance of a Monument permit.

Summary Information

Applicant Names: Erin M. Oleson Ph.D. and Jeff E. Moore Ph. D.
Affiliations: NOAA/NMFS Pacific Islands Fisheries Science Center (PIFSC), Protected Species Division, Cetacean Research Program
NOAA/NMFS Southwest Fisheries Science Center (SWFSC), Marine Mammal and Turtle Division, California Current Marine Mammal Assessment Program

Permit Category: Conservation and Management
Proposed Activity Dates: 1 July – 15 December 2017
Proposed Method of Entry (Vessel/Plane): NOAA Ship *Oscar Elton Sette* and NOAA Ship *Reuben Lasker*

Proposed Locations: All waters of the Northwestern Hawaiian Islands (NWHI), Papahānaumokuākea Marine National Monument (PMNM) surrounding all ten islands/atolls

Estimated number of individuals (including Applicant) to be covered under this permit:
NOAA Ship *Oscar Elton Sette*: 19 Scientists and 21 Officers and Crew;
NOAA Ship *Reuben Lasker*: 17 Scientists and 22 Officers and Crew.
Total: 36 Scientists and 45 Officers and Crew – however it is noted that both NOAA Ship *Oscar Elton Sette* and NOAA Ship *Reuben Lasker* have applied for separate PMNM permits to serve as respective support platforms for this activity.

Estimated number of days in the Monument: NOAA Ship *Oscar Elton Sette*: 87;
NOAA Ship *Reuben Lasker*: 100

Description of proposed activities: (complete these sentences):

a.) The proposed activity would…
The proposed activity would estimate the abundance and distribution of cetaceans within the Hawaiian Exclusive Economic Zone (EEZ) using visual and acoustic methods. Concurrent with the abundance estimation, the expedition would conduct an ecosystem assessment of their habitat.

b.) To accomplish this activity we would ….
To accomplish this activity we would conduct the Hawaiian Islands Cetacean and Ecosystem Assessment Survey (HICEAS), which will be a two ship, 187 sea-day effort to survey the waters of the Hawaiian archipelago extending offshore to the limits of the U.S. Exclusive Economic Zone (EEZ). Highlight components of HICEAS: collect visual and passive acoustic encounter data necessary to derive abundance estimates for cetacean and seabird species; obtain tissue samples for genetic studies of population structure and contaminant levels; collect photographs for evaluation of population size, human-interactions, and assessment of health condition; deploy satellite telemetry tags and acoustic recorders to evaluate population movements and range; and collect oceanographic data to assess the habitat of the study area.

c.) This activity would help the Monument by …
This activity would help the PMNM by providing comprehensive abundance estimates on cetaceans within the NWHI. The two-ship cetacean assessment survey is necessary to evaluate the status of the cetaceans within the EEZ of the Hawaiian Islands for Marine Mammal Stock Assessments as mandated by the Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA) and the National Marine Sanctuaries Act (NMSA) (NMSA for the Hawaiian Islands Humpback Whale National Marine Sanctuary portion of the survey). This survey would provide new abundance estimates and allow the National Marine Fisheries Service (NMFS) to meet its MMPA mandate to write Stock Assessment Reports for US EEZ waters. Data on sperm whales and other endangered large whales will contribute to ESA Status Reviews for those species. Identification of possible insular endemic populations of cetaceans will contribute to their conservation and preservation.

Other information or background:
This year will be the third HICEAS survey effort (prior year surveys occurred in 2002 and 2010) and will begin to allow for the establishment of trends, relationships with oceanographic characters, and more robust evaluation of species of particular concern, including false killer whales.

Section A - Applicant Information

1. Applicants
Name (last, first, middle initial): Oleson, Erin M. Ph.D.
Title: Leader, Cetacean Research Program
Pacific Islands Fisheries Science Center
NOAA Fisheries

Name (last, first, middle initial): Moore, Jeff E. Ph.D.
Title: Leader, California Current Marine Mammal Assessment Program
Southwest Fisheries Science Center
NOAA Fisheries

1a. Intended field Principal Investigator (See instructions for more information):
Tentative Cruise Leaders for *Oscar Elton Sette* (subject to change)
Legs 1, 2, 3: Erin Oleson, Amanda Bradford, Marie Hill

Tentative Cruise Leaders for *Reuben Lasker* (subject to change)
Legs 1, 2, 3, 4: Jeff Moore, Eric Archer, Jim Carretta, Karin Forney

2. Mailing addresses (street/P.O. box, city, state, country, zip):
Dr. Erin Oleson
[redacted]
For students, major professor's name, telephone and email address: N/A

Dr. Jeff Moore
NOAA Southwest Fisheries Science Center
[redacted]
For students, major professor's name, telephone and email address: N/A

3. Affiliations (institution/agency/organization directly related to the proposed project):
Protected Species Division, Pacific Islands Fisheries Science Center, NOAA Fisheries
Marine Mammal and Turtle Division, Southwest Fisheries Science Center, NOAA Fisheries

4. Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Research Diver; Jane Doe, Field Technician):
TBD – list will be finalized by the end of May.

Section B: Project Information

5a. Project location(s):

		Ocean Based	
☒ Nihoa Island	☐ Land-based	☒ Shallow water	☒ Deep water
☒ Necker Island (Mokumanamana)	☐ Land-based	☒ Shallow water	☒ Deep water
☒ French Frigate Shoals	☐ Land-based	☒ Shallow water	☒ Deep water
☒ Gardner Pinnacles	☐ Land-based	☒ Shallow water	☒ Deep water
☒ Maro Reef			
☒ Laysan Island	☐ Land-based	☒ Shallow water	☒ Deep water
☒ Lisianski Island, Neva Shoal	☐ Land-based	☒ Shallow water	☒ Deep water
☒ Pearl and Hermes Atoll	☐ Land-based	☒ Shallow water	☒ Deep water
☒ Midway Atoll	☒ Land-based	☒ Shallow water	☒ Deep water
☒ Kure Atoll	☐ Land-based	☒ Shallow water	☒ Deep water
☐ Other			

☐ Remaining ashore on any island or atoll (with the exception of Midway & Kure Atolls and Field Camp staff on other islands/atolls) between sunset and sunrise.

NOTE: There is a fee schedule for people visiting Midway Atoll National Wildlife Refuge via vessel and aircraft.

Location Description:
Marine mammal surveys are conducted using line-transect methodology. The survey lines have been designed to cover uniformly the waters within the 200 nm EEZ around the entire Hawaiian Island chain from the Island of Hawaii in the southeast to Kure Atoll in the NWHI. The tracklines are a set of parallel transect lines oriented along a WNW and ESE direction to avoid the dominant swells generated by the NE to Easterly Trade Winds. Small boats may approach closer than one mile from any island or shoal if animals are seen from the ship, but no one will set foot on any island (other than Midway if there is an emergency need).

It may occasionally be necessary to divert the ship's course from the established trackline during regular effort due to glare or adverse sea conditions or a sighting in order for observers to make estimates of school size. When the observers have completed scientific operations for the sighting, the ship will resume the same course and speed as prior to the sighting.

5b. Check all applicable regulated activities proposed to be conducted in the Monument:

☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource

☒ Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands

☐ Anchoring a vessel

☐ Deserting a vessel aground, at anchor, or adrift

☒ Discharging or depositing any material or matter into the Monument

☐ Touching coral, living or dead

☒ Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument

☒ Attracting any living Monument resource

☐ Sustenance fishing (Federal waters only, outside of Special Preservation Areas, Ecological Reserves and Special Management Areas)

☐ Subsistence fishing (State waters only)

☐ Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

6. Purpose/Need/Scope ***State purpose of proposed activities:***
The purpose of the two-ship cetacean assessment survey is to evaluate the status of the cetaceans within the EEZ of the Hawaiian Islands for Marine Mammal Stock Assessments as mandated by the MMPA, ESA, and NMSA. This survey will allow NMFS to meet its MMPA mandate to write Stock Assessment Reports for US EEZ waters. Data on sperm whales and other endangered large whales will contribute to ESA Status Reviews for those species. Identification of possible insular endemic populations of cetaceans will contribute to their conservation and preservation.

*Considering the purpose of the proposed activities, do you intend to film / photograph federally protected species? Yes ☒ No ☐

We are authorized to film/photograph marine cetaceans under MMPA/ESA permit number #15240 (enclosed) and #20311 (pending permit renewal).

For a list of terrestrial species protected under the Endangered Species Act visit:
http://www.fws.gov/endangered/
For a list of marine species protected under the Endangered Species Act visit:
http://www.nmfs.noaa.gov/pr/species/esa/
For information about species protected under the Marine Mammal Protection Act visit:
http://www.nmfs.noaa.gov/pr/laws/mmpa/

7. Answer the Findings below by providing information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Monument:

The Findings are as follows:

a. How can the activity be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of the Monument?
The survey will be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of PMNM. This project is a continuing effort to provide cetacean abundance estimates within an ecosystem approach to management framework for the EEZ of Hawai'i. The main survey methods, visual and acoustic, and most ecosystem projects are non-invasive and non-lethal; marine mammal skin biopsies are designed to be minimally invasive and non-lethal. Additionally, equipment like the DASBRs and acoustic arrays will be deployed and recovered either within hours (towed hydrophones which are tethered to the ship at all times) or between 20-30 days later (DASBRs which will be released offshore). This equipment has been used before for the purpose of monitoring ocean currents and recording cetacean sounds and has not had any interactions with coral reefs or other protected species (turtles, seabirds).

To safeguard the cultural resources of the Monument, all personnel will attend the requisite Native Hawaiian cultural briefing prior to entering monument waters. This education instills the awareness of the natural, cultural, and historic values the monument holds. Also, the NOAA vessels have informative cultural literature provided by the Office of Hawaiian Affairs and the monument for personnel seeking further knowledge or who may not be able to attend the briefings.

b. How will the activity be conducted in a manner compatible with the management direction of this proclamation, considering the extent to which the conduct of the activity may diminish or enhance Monument cultural, natural and historic resources, qualities, and ecological integrity, any indirect, secondary, or cumulative effects of the activity, and the duration of such effects?

The proposed activities will have minimal impact on the monument and its resources. The research is primarily non-invasive visual and passive acoustic surveys. These activities are also in concert with the objectives of the management plan for PMNM and are discussed within the management plan in the Threatened and Endangered Species Action Plan Strategy TES-2: *Determine the status of cetacean populations and verify and manage potential threats over the life of the plan.*

Activity TES-2.1: Census cetacean populations.
In order to best develop management strategies for cetaceans in the monument, surveys and observations will be pursued to gain information on species distribution and abundance estimates. This information will allow managers to better define humpback whale breeding and calving areas in the NWHI.

c. Is there a practicable alternative to conducting the activity within the Monument? If not, explain why your activities must be conducted in the Monument.
There is no practicable alternative to conducting the two-ship survey within the monument because the monument is a considerable portion of the Hawaiian Island EEZ. Further, the survey must take place inside monument waters in order to obtain an estimate of marine mammals in the area as well as characterize their habitat.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?
The proposed activities have been identified as vital to the management of the monument's natural resources in its management plan (see #b above) and will have no adverse impact on its resources qualities and ecological integrity. Additionally – the cetacean research is authorized under MMPA/ESA permit #15240 and #19091 (enclosed) and #20311 (pending permit renewal), and the turtle research is authorized under ESA permit # 19091 (enclosed).

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.
The duration of the activity is no longer than necessary to achieve its stated purpose. The vast majority of the survey will be conducted in passing mode, which is a transit through the PMNM at 10 knots. Oceanographic sampling requires a station stop of approximately 2.5 hours daily to

conduct a Conductivity Temperature Depth (CTD) cast. Additionally, one High Frequency Acoustic Recording Package (HARP) will be recovered at Pearl and Hermes Atoll, the data will be downloaded and the HARP will be re-deployed. The HARP activities should take no more than 4 hours total. Opportunistic hexacopter flight(s) will be flown over cetaceans and will hover no more than 1 hour over the animals.

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.
All scientific personnel participating on the research survey have extensive survey experience including working within national marine sanctuaries and within PMNM. Dr. Erin Oleson and Jeff Moore's CVs are attached. Dr. Oleson has been the PI on prior PMNM Research permits for surveys in Monument waters.

g. Provide information demonstrating that you have adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.
This project is supported by 87 sea days aboard NOAA Ship *Oscar Elton Sette* and 100 sea days aboard NOAA Ship *Reuben Lasker* from the NOAA Office of Marine and Aviation Operations. HICEAS is funded by the Bureau of Ocean Energy Management (BOEM), the U.S. Navy, and the NOAA National Marine Fisheries Service.

h. Explain how your methods and procedures are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument cultural, natural and historic resources, qualities, and ecological integrity.
Please see Finding A. The methods and procedures proposed during HICEAS have been refined over numerous cruises since the 1980s. The biologists and observers conducting this work have extensive experience working with cetaceans and working within national marine sanctuaries and PMNM. In addition to the conditions included in the MMPA/ESA permit, cruise participants will adhere to all applicable PMNM best management practices including small boat and gear disinfection protocols.

i. Has your vessel been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?
Both NOAA Ship *Oscar Elton Sette* and NOAA Ship *Reuben Lasker* have an OLE type-approved VMS.

j. Demonstrate that there are no other factors that would make the issuance of a permit for the activity inappropriate.
N/A

8. Procedures/Methods:
The following procedures and methods would occur aboard each vessel:

a. Line transect survey methods will be used to collect abundance data along a designated trackline aboard both NOAA ships. A daily watch for cetaceans will be maintained on the flying bridge during daylight hours by three mammal observers using 25x150 binoculars.

b. Passive acoustics using towed hydrophones will be used to improve marine mammal abundance estimates and to locate and record marine mammals. Two sonobuoys will be deployed at each evening CTD station to listen for large whales. In addition, a sonobuoy may be deployed when large whales are sighted during daytime visual surveys.
c. Biopsy samples for genetic analysis of marine mammals will be collected on an opportunistic basis. The animals to be sampled will be approached by a small boat. Samples will be collected from animals within 10 meters (m) to 30 m of the bow of the vessel, using a dart fired from a crossbow.
d. Satellite tagging of cetaceans will be deployed on an opportunistic basis. The animals targeted to be tagged will be approached by a small boat. Tags will be deployed using a tagging rifle.
e. Photographs of marine mammals will be taken on an opportunistic basis. These will be used to study social behavior and movement patterns of identified individuals, and to study oceanographic variation. The animals to be photographed will be approached by a NOAA ship during normal survey operations, will approach the vessel on their own, or will be approached by a small boat.
f. Unmanned aerial surveys (UAS) using a hexacopter (APH-22) to collect imagery on an opportunistic basis. The animals to be photographed will be approached by a NOAA ship at steerage, will approach the vessel on their own, or will be approached by a small boat at steerage. For more information on UAS, please see attached.
g. Marine mammal body parts may be salvaged from dead floating or stranded specimens on an opportunistic basis at the discretion of the Cruise Leader. This includes whale and dolphin ivory and carcasses. All marine mammal specimens obtained will be archived at the Southwest Fisheries Science Center (SWFSC), Pacific Islands Fisheries Science Center (PIFSC) or the University of Hawaii Marine Mammal Stranding Response Program (UH), but may be released on extended loan to recognized research institutions according to existing guidelines.
h. Visual surveys of seabirds will be conducted from the flying bridge during daylight hours by two seabird observers. Seabird observers will use handheld and 25x150 binoculars. Active acoustic surveys using a scientific EK-60 depth sounder, operated continuously, at 38, 70, 120 and 200 kilohertz (KHz), will be interfaced to a data acquisition system to estimate micronekton biomass between 0 and 500 m.
i. Oceanographic sampling during the day while underway may include up to four expendable bathythermograph (XBT) drops per day, and continuous Thermosalinograph (surface water temperature and salinity) sampling. CTDs will be conducted at least once per day, after sunset, and may occur twice per day, with the second cast before sunrise.
j. In order to further characterize the ecosystem, fish and cephalopods will be collected on an opportunistic basis at the discretion of the Cruise Leader. Hook-and-line gear and dipnets may be used. Fish and cephalopods will be measured, sexed, and stomach contents will be examined and recorded by scientific personnel. Small squid (<30 cm dorsal mantle length) will be frozen for workup at the lab.
k. A HARP will be recovered, serviced and redeployed at Pearl and Hermes Atoll. HARPs consist of three parts; (1) hydrophones to convert sound pressure into a voltage signal that is amplified and filtered, (2) a Data Acquisition System that records and stores sound, and (3) digital disk drives to store data. The seafloor instrument frames are compact

arrangements of flotation, data recording electronics, batteries, ballast and release systems that free-fall to the seafloor, record sound for a specified period, and are recalled back to the sea surface for data retrieval and battery replenishment. Seafloor packages are easy to deploy and recover from typical oceanographic ships and mid-sized fishing vessels. In all configurations listed, the hydrophone sensor was designed to be tethered 10 m above the seafloor package which provides a quieter acoustic background for better sound recordings than near the sea surface.

l. Drifting Acoustic Spar Buoy Recorders (DASBRs) will be deployed offshore from the Main Hawaiian Islands and recovered at their new location after approximately 20-30 days of drifting. Each DASBR contains a satellite locator that will be used to determine its drifted location. Ocean currents and eddies are unpredictable, such that DASBRs deployed in the MHIs may drift into the PMNM, requiring recovery from within the Monument.

As previously stated, cetacean research is authorized under MMPA/ESA permit #15240 and #19091 (enclosed) and #20311 (pending permit renewal), and the turtle research is authorized under ESA permit # 19091 (enclosed).

NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding.

9a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):

Common name:
Please see attached.

Scientific name:

& size of specimens:
Biopsy: the maximum number of biopsy samples planned to be collected is included in our ESA/MMPA permit and will not be exceeded under any conditions. From past experience, the ultimate number will be much lower and will not include all the species listed. The size of each biopsy sample is a small amount (approx. 1 cm^2) of skin and blubber.

Opportunistic carcasses or samples of dead birds, turtles, and cetaceans may be collected at the discretion of the Cruise Leader.

Collection location:
☒ Whole Organism ☒ Partial Organism

9b. What will be done with the specimens after the project has ended?
Biopsy samples will be split into two samples and one half will be archived at the PIFSC and the other half at the SWFSC. Most fish and squid samples will be disposed of after data collection.

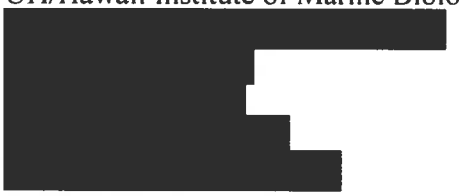
All specimens of dead birds, turtles, and cetaceans will be archived at the following institutions; the Point of Contact at each institution is listed below.

Cetacean specimens will be archived at the SWFSC, PIFSC, or UH.

Dr. Erin Oleson

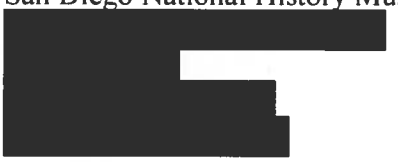
Gabriela Serra-Valente
NOAA/NMFS/SWFSC/MMTD

Dr. Kristi West
UH/Hawaii Institute of Marine Biology



Birds specimens will be archived at the San Diego Natural History Museum.

Phil Unitt
San Diego National History Museum

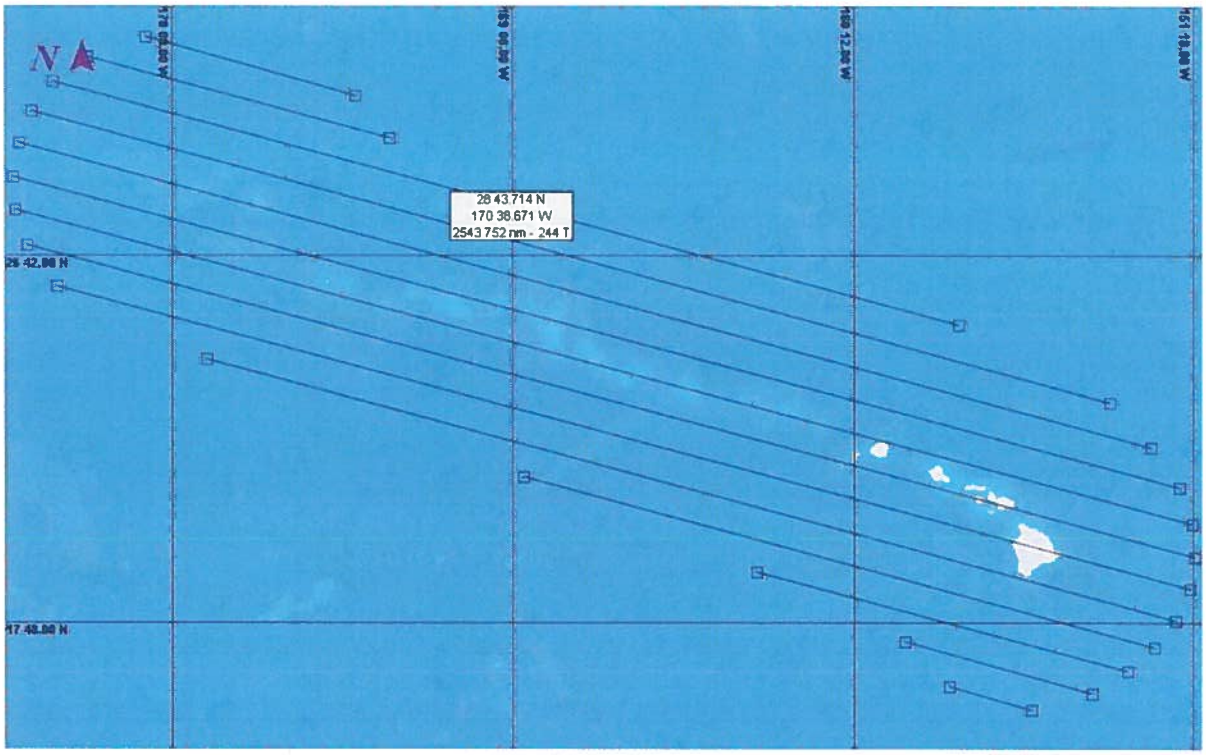


Turtles specimens will be archived at the PIFSC.

Dr. T. Todd Jones
NOAA/NMFS/PIFSC/PSD

9c. Will the organisms be kept alive after collection? ☐ **Yes** ☒ **No**
Collected organisms will consist of fish and squid, and worked up at sea or in the lab at SWFSC.

• General site/location for collections:
Samples will be collected in the waters of the PMNM along the tracklines proposed for HICEAS. The actual location on the trackline of the sample collection will depend on weather and other events. Proposed tracklines are shown below.



• Is it an open or closed system? ☐ Open ☐ Closed
N/A

• Is there an outfall? ☐ Yes ☐ No
N/A

• Will these organisms be housed with other organisms? If so, what are the other organisms?
No.

• Will organisms be released?
N/A

10. If applicable, how will the collected samples or specimens be transported out of the Monument?
Biopsy, fish and squid samples will be frozen to be transported out of the monument via NOAA Ship *Oscar Elton Sette* and NOAA Ship *Reuben Lasker.*

11. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:
The biopsy samples will be split and stored at the PIFSC and the SWFSC. The laboratory at SWFSC will perform genetic and steroid analyses for the stock structure studies, and to determine sex and pregnancy rates when appropriate. Results of these studies will be made available to interested Institutions, and extracted DNA will be available to monument scientists upon request. Cruise summaries and data reports are standard components of PIFSC and SWFSC cruise documentation. All reports and publications are available upon request. All results published by NOAA/NMFS PIFSC and SWFSC are public record.

12. List all specialized gear and materials to be used in this activity:
Fujinon 25x150 binoculars will be used for detecting marine mammals. Hand-held binoculars will be used for sighting birds, turtles, and other animals. Fluorometers, echosounders, bathythermographs, thermosalinographs, salinometers, and conductivity temperature and depth (CTD) devices will be used for collecting oceanographic data. Water samples will be collected to obtain the necessary oceanographic information. Cameras will be used to verify the identification of the encountered marine mammals. Small boats will be launched from the ship to allow individual identification photographs to be taken of selected species of cetaceans and to collect skin biopsy samples. Crossbows will be used to collect the skin samples. Dipnets will be used to obtain fish and squid samples. Sonobuoys may be deployed to obtain recordings of marine mammal vocalizations. A passive (receive-only) acoustic array will be towed approximately 300 meters behind the ship to record sounds made by dolphins and whales. An active acoustic EK-60 depth sounder will be used to estimate micronekton biomass of the proximate area. Tagging rifles will be used to deploy satellite tags on cetaceans. Three types of passive acoustic recorders (HARPs, DASBRs and tetrahedral array) will be deployed and retrieved to obtain recordings of marine mammal vocalizations. Hexacopter UAVs will be used to collect aerial imagery of cetaceans or other animals.

13. List all Hazardous Materials you propose to take to and use within the Monument:
Bleach, cetylcide, ethanol, and isopropyl alcohol will be used to clean and sanitize biopsy and tagging equipment. Epoxy will be used to encase electronics for acoustic instruments. Castor oil will be used in the towed hydrophone passive acoustic array. Liquid nitrogen will be used to deep freeze the biopsy samples in the dewar. Carbon dioxide cartridges will be used in our personal floatation devices (PFDs), tagging rifles, and sonobuoys. Lithium batteries will be used in the HARP instrument and sonobuoys.

14. Describe any fixed installations and instrumentation proposed to be set in the Monument:
As in past years, the HARP will remain in the monument for up to a year and will be serviced again during the 2018 field season.

15. Provide a time line for sample analysis, data analysis, write-up and publication of information:
A NOAA Technical Memorandum regarding sample and data analysis is anticipated to be published within a year after survey end (September 2018).

16. List all Applicants' publications directly related to the proposed project:
Abecassis, M., J. Polovina, R.W. Baird, A. Copeland, R. Domokos, E.M. Oleson, Y. Jia , G.S. Schorr, D.L. Webster and R.D. Andrews. 2015. Characterizing a foraging hotspot for short-finned pilot whales and Blainville's beaked whales off the west side of the Island of Hawai'i with tagging and oceanographic data. PLoS ONE 10(11):E0142628.

Baird, R.W., M.B. Hanson, G.S. Schorr, D.L. Webster, D.J. McSweeney, A.M. Gorgone, S.D. Mahaffy, D. Holzer, E.M. Oleson, R.D. Andrews. 2012. Assessment of range and primary habitats of Hawaiian insular false killer whales: a scientific basis for determination of "critical habitat". Endangered Species Research 18:47-61.

Baird, R.W., E.M. Oleson, J. Barlow, A.D. Ligon, A.M. Gorgone, S.D. Mahaffy. 2013. Evidence of an island- associated population of false killer whales (*Pseudorca crassidens*) in the Northwestern Hawaiian Islands. Pacific Science 67:513-521.

Baird, R.W, S.D. Mahaffy, A.M. Gorgonne, T. Cullins, D.J. McSweeney, E.M. Oleson, A.L. Bradford, D.L.Webster. 2014. False killer whales and fisheries interactions in Hawaiian waters: Evidence for sex bias and variation among populations and social groups. Marine Mammal Science DOI: 10.1111/mms.12177.

Barkley, Y., J. Barlow, S. Rankin, G. D'Spain, E.M. Oleson. 2016. Development and testing of towed tetrahedral hydrophone array prototypes to improve localization accuracy during shipboard line-transect cetacean surveys. U.S. Dept. of Commerce, NOAA Technical Memorandum, NMFS-PIFSC-49, 42 p. doi:10.7289/V5TM784H.

Baumann-Pickering, S., M.A. Roch, R.L. Brownell, A.E. Simonis, M.A. McDonald, A. Solsona-Berga, E.M. Oleson, S.M. Wiggins, J.A. Hildebrand. 2014. Spatio-temporal patterns of beaked

whale echolocation signals in the North Pacific. PLoS ONE 9(1): e86072. doi:10.1371/journal.pone.0086072.

Baumann-Pickering, S., A.E. Simonis, E.M. Oleson, R.W Baird, M.A. Roch, S.M. Wiggins. 2015. False killer whale and short-finned pilot whale acoustic identification. Endangered Species Research 28:97-108.

Baumann-Pickering, S., J.S. Trickey, S.M. Wiggins, and E.M. Oleson. 2015. Odontocete occurrence in relation to changes in oceanography at a remote equatorial Pacific seamount. Marine Mammal Science DOI: 10.1111/mms.12299.

Bayless, A.R., E.M. Oleson, S. Baumann-Pickering, A.E. Simonis, J. Marchetti, S. Martin, S.M. Wiggins. *In Review*. Acoustically monitoring the Hawaii longline fishery for interactions with false killer whales. Fisheries Research.

Bradford, A.L., K.A. Forney, E.M. Oleson, and J. Barlow. 2014. Accounting for subgroup structure in line-transect abundance estimates of false killer whales (*Pseudorca crassidens*) in Hawaiian waters. PlosONE. 9(2): e90464.

Bradford, A.L., K.A. Forney, E.M. Oleson, J. Barlow. 2017. Line-transect abundance estimates of cetaceans in the Hawaiian EEZ. Fishery Bulletin 115:129-142. doi:10.7755/FB.115.2.1

Carretta, J.V., K.A. Forney, E.M. Oleson, K. Martien, M.M. Muto, M.S. Lowry, J. Barlow, J. Baker, B. Hanson, D. Lynch, L. Carswell, R.L. Brownell, J. Robbins, D.K. Mattila, K. Ralls, and M.C. Hill. 2011. U.S. Pacific Marine Mammal Stock Assessments: 2010. U.S. Dep. Commer., NOAA Tech Memo., NOAA-TM-NMFS-SWFSC-476, 352 p.

Carretta, J.V., K.A. Forney, E.M. Oleson, K. Martien, M.M. Muto, M.S. Lowry, J. Barlow, J. Baker, B. Hanson, D. Lynch, L. Carswell, R.L. Brownell, J. Robbins, D.K. Mattila, K. Ralls, and M.C. Hill. 2012. U.S. Pacific Marine Mammal Stock Assessments: 2011. U.S. Dep. Commer., NOAA Tech Memo., NOAA-TM-NMFS-SWFSC-488, 360 p.

Carretta, J.V., E.M. Oleson, D.W. Weller, A.R. Lang, K.A. Forney, J. Baker, M.B. Hanson, K. Martien, M.M. Muto, M.S. Lowry, J.Barlow, D. Lynch, L. Carswell, R.L. Brownell, D.K. Mattila, and M.C. Hill. 2013. U.S. Pacific Marine Mammal Stock Assessments: 2012. NOAA Tech Memo NOAA-TM- NMFS-SWFSC-504.

Carretta, J.V., E.M. Oleson, D.W. Weller, A.R. Lang, K.A. Forney, J. Baker, M.B. Hanson, K. Martien, M.M. Muto, A.J. Orr, H. Huber, M.S. Lowry, J. Barlow, J.E. Moore, D. Lynch, L. Carswell, R.L. Brownell, and D.K. Mattila. 2015. U.S. Pacific Marine Mammal Stock Assessments: 2014. NOAA Technical Memorandum NOAA-TM- NMFS-SWFSC-549.

Chivers, S. J., R.W. Baird, K.M. Martien, B.L. Taylor, E. Archer, A.M. Gorgone, B.L. Hancock, N.M. Hedrick, D.K. Mattila, D.J. McSweeney, E.M. Oleson, C.L. Palmer, V. Pease, K.M. Robertson, J. Robbins, J. C. Salinas, G.S. Schorr, M. Schultz, J.L. Theileking, and D.L. Webster.

2010. Evidence of genetic differentiation for Hawai'ian insular false killer whales (*Pseudorca crassidens*). NOAA Tech Memo NOAA-TM-NMFS-SWFSC-458. 44 pgs.

Forney, K.A., E.A. Becker, D.G. Foley, J. Barlow, E.M. Oleson. 2015. Habitat-based models of cetacean density and distribution in the central Pacific. Endangered Species Research 27:1-20.

Martien, K.K., S.J. Chivers, R.W. Baird, E. Archer, A.M. Gorgonne, B.L. Hancock, D. Matilla, D.J. McSweeney, E.M. Oleson, C.L. Palmer, V. Pease, K.M. Robertson, J. Robbins, G.S. Schorr, M. Schultz, D.L. Webster, B.L. Taylor. 2014. Genetic differentiation of Hawaiian false killer whale (*Pseudorca crassidens*) discordant patterns at nuclear and mitochondrial markers suggest complex evolutionary history. Journal of Heredity doi:10.1093/jhered/esu029.

Monnahan C.C., T.A. Branch, K.M. Stafford, Y.V. Ivashchenko, E.M. Oleson. 2014. Estimating historical eastern North Pacific blue whale catches using spatial calling patterns. PLoS ONE 9(6): e98974. doi:10.1371/journal.pone.0098974.

Moore, JE, and J. Barlow. 2013. Declining abundance of beaked whales (family *Ziphiidae*) in the California Current large marine ecosystem. PLoS ONE 8(1): e52770

Moore JE, Barlow JP. 2014. Improved abundance and trend estimates for sperm whales in the eastern North Pacific from Bayesian hierarchical modeling. Endangered Species Research 25:141-150.

Oleson, E.M., C.H. Boggs, K.A. Forney, M.B. Hanson, D.R. Kobayashi, B.L. Taylor, P.R. Wade, G.M. Ylitalo. 2010. Status review of Hawaiian insular false killer whales (*Psuedorca crassidens*) under the Endangered Species Act. U.S. Dep. Commer., NOAA Tech Memo., NOAA-TM-NMFS-PIFSC-22, 140 p. + Appendices.

Oleson, E.M., Boggs, C.H., Forney, K.A., Hanson, M.B., Kobayashi, D.R., Taylor, B.L., Wade, P.R., Ylitalo, G.M. 2012. Reevaluation of the DPS designation for Hawaiian (now main Hawaiian Islands) insular false killer whales. Pacific Islands Fisheries Science Center, PIFSC Internal Report, IR-12-038, 39 p.

Oleson, E.M., R.W. Baird, K.M. Martien, and B.L. Taylor. 2013. Island-associated stocks of odontocetes in the main Hawaiian Islands: A synthesis of available information to facilitate evaluation of stock structure. PIFSC Working Paper WP-13-003.

Oleson, E.M., A. Širović, A.R. Bayless, J.A. Hildebrand. 2014. Synchronous seasonal change in fin whale song in the North Pacific. PLoSONE 9(12): e115678. doi:10.1371/journal.pone.0115678.

Simonis, A.E., S. Baumann-Pickering, E.M. Oleson, M.L. Melcon, M. Gassmann, S.M. Wiggins, and J.A. Hildebrand. 2012. High-frequency modulated signals of killer whales (*Orcinus orca*) in the North Pacific Ocean. J. Acoust. Soc. Am. 131, EL295-EL301.

Širović, A., S.M. Wiggins, and E.M. Oleson. 2013. Ocean noise in the tropical and subtropical Pacific Ocean. JASA 134(4): 2681-2689.

Young, H. K.Nigro, D.McCauley, L.T. Ballance, E.M. Oleson, S. Baumann-Pickering. *In Review.* Limited trophic partitioning among sympatric delphinids off a tropical oceanic atoll. Marine Ecology Progress Series.

With knowledge of the penalties for false or incomplete statements, as provided by 18 U.S.C. 1001, and for perjury, as provided by 18 U.S.C. 1621, I hereby certify to the best of my abilities under penalty of perjury of that the information I have provided on this application form is true and correct. I agree that the Co-Trustees may post this application in its entirety on the Internet. I understand that the Co-Trustees will consider deleting all information that I have identified as "confidential" prior to posting the application.

Signature Date

Signature Date

SEND ONE SIGNED APPLICATION VIA MAIL TO THE MONUMENT OFFICE BELOW:

NOAA/Inouye Regional Center
NOS/ONMS/PMNM/Attn: Permit Coordinator
1845 Wasp Blvd, Building 176
Honolulu, HI 96818
FAX: (808) 455-3093

DID YOU INCLUDE THESE?
☒ Applicant CV/Resume/Biography
☒ Intended field Principal Investigator CV/Resume/Biography
☒ Electronic and Hard Copy of Application with Signature
☐ Statement of information you wish to be kept confidential
☒ Material Safety Data Sheets for Hazardous Materials

HICEAS 2017 Methods Descriptions

Unmanned Aerial Systems Operations

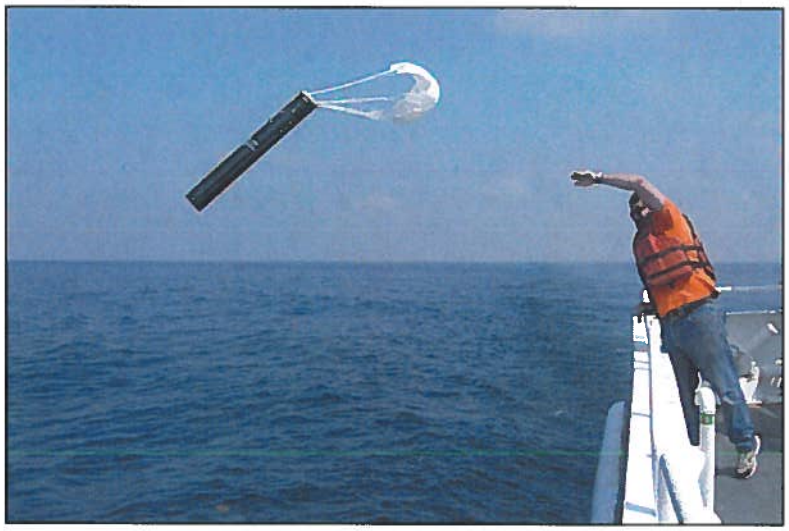
Aerial surveys using unmanned aerial systems (UAS) will utilize a rotary, short endurance platform (the APH-22 hexacopter, a vertical take-off and landing (VTOL) aircraft) equipped with a camera system.

The UAS will be controlled by a licensed UAS pilot who has received UAS flight training by the NOAA's Office of Marine and Aviation Operations (OMAO). The UAS will be launched from a ship or small vessel-based launch site where the installed camera system will relay real-time imagery to the UAS pilot. The UAS pilot will fly directly toward previously-sighted cetaceans in the area. The UAS may circle or hover directly over animals to collect imagery (confirm species identification, age class, body condition, group size, identify potential social structure, etc.). The UAS will always remain in the line of sight of the UAS pilot. Rotary UAS flights will be generally conducted at altitudes between 75-400 ft. with an approximate maximum speed of 15 m/s in order to minimize incidental harassment or disturbance from the presence of the UAV.

The maximum amount of time spent hovering over a single group is half the total battery life or about 20 minutes of flight time. If the targeted animal or group of animals displays avoidance behavior in response to the presence of the UAS, such as accelerated transit, a mother displays protective behavior, or other aberrant behaviors, then we will obtain the necessary imagery as quickly as possible then pilot the UAS away from the animal group to minimize disturbance. All UAS operations will be conducted in coordination with and approved by OMAO.

Sonobuoy

Sonobuoy: A sonobuoy is a short duration passive acoustic monitoring device capable of providing a bearing to the sound source. Two or more sonobuuys are required to verifu vocalizing source location. Soobuoyst can be deployed from the ship or small boat. When animals of interest (generally baleen whales) are sighted, 1-3 sonobuoys will be deployed to listen for sounds produced by the animals and providing the ability to verify the location of the sound source. Once the sonobuoy is deployed, a radio transmitter attached to a float remains on the surface and sends the acoustic signal to a receiving station on the ship. The hydrophones are suspended 90-100 ft. below the surface.

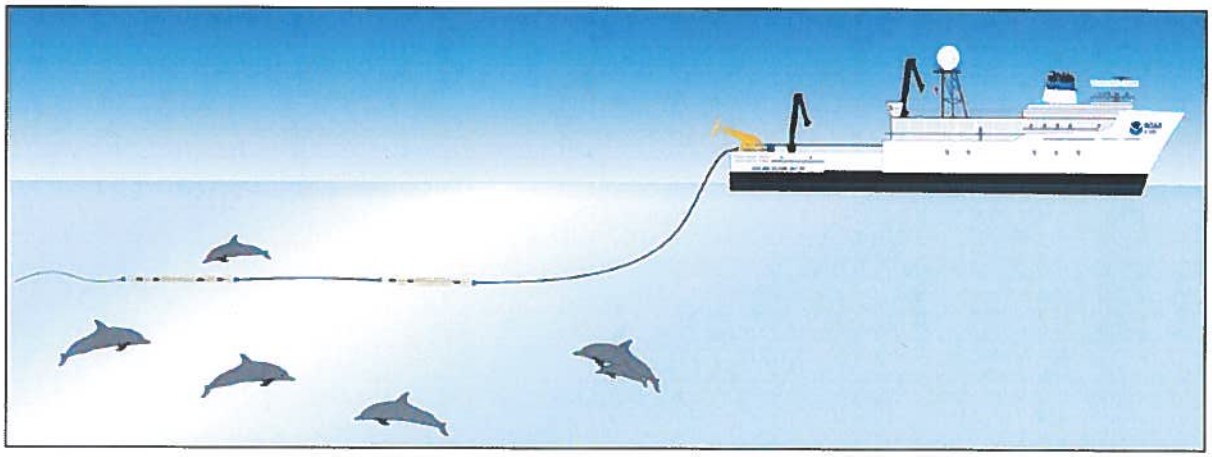


Drifting Acoustic Spar Buoy Recorder (DASBR)

The DASBR unit is designed as a PVC spar buoy containing a Wildlife Acoustics1 Song Meter 2 Bat (SM2BAT+) ultrasonic recorder or a Soundtrap recording system. The 1.4-m spar buoy is constructed to survive vessel collisions and poses no hazards to navigation. An array of two hydrophones separated by 2m is suspended 100m below the buoy (to avoid surface noise but still allow detection of faint surface reflections from echolocation clicks). A 1 kg anchor and additional lead weights (~5 kg) are suspended below the hydrophone array to maintain a vertical orientation and prevent the unit from drifting ashore. Stereo sounds are recorded (16-bits/channel @ 192 ksamples/sec) on flash memory using a duty cycle based on the anticipated deployment time. Hydrophone pre-amps flatten the noise spectrum and allow >70 dB of dynamic range over the entire sound spectrum (10 Hz to 96 kHz). Hydrophone depth (from a pressure transducer in the hydrophone package), surface temperature (inside the buoy), and GPS position are recorded once per sound file. Record times (file lengths) and duty cycles are programmable. Recovery is facilitated by a low-cost satellite locator which provides at least one location per day and a VHF radio beacon. The DASBRs were constructed using several different configurations of HTI-96-min, HTI-92-WB, and Reson TC4013 hydrophone elements.

Towed Hydrophone Arrays

Passive acoustic operations are a regular aspect of all PIFSC large vessel surveys. Various towed hydrophone arrays are used to listen for and locate vocal cetaceans to increase encounter rate during large-scale surveys. Arrays are typically towed at full ship speed (10 kts), though can remain in the water even at slower speed, down to 2 kts. All towed arrays employ only passive listening. There are no active acoustic elements within our towed arrays. Towed array generally extend up to 300 m behind the vessel and are deployed and retrieved using a hydraulic-powered winch aboard the vessel. Arrays have from 2 to 5 hydrophone elements spaced to allow localization of most cetacean vocalizations. The hydrophones are spaced 50cm to 250cm from each other within a castor-oil-filled polyurethane tube.



Papahānaumokuākea Marine National Monument
Compliance Information Sheet

1. Updated list of personnel to be covered by permit. List all personnel names and their roles here (e.g. John Doe, Diver; Jane Doe, Field Technician, Jerry Doe, Medical Assistant): see attached table

2. Specific Site Location(s): (Attach copies of specific collection locations): entire Hawaii EEZ

3. Other permits (list and attach documentation of all other related Federal or State permits):
MMPA/ESA take permit 19091, 20311

3a. For each of the permits listed, identify any permit violations or any permit that was suspended, amended, modified or revoked for cause. Explain the circumstances surrounding the violation or permit suspension, amendment, modification or revocation. None

4. Funding sources (Attach copies of your budget, specific to proposed activities under this permit and include funding sources. See instructions for more information): NMFS OPR, NMFS PIFSC, NMFS SWFSC, U.S. Navy Commander Pacific Fleet, U.S. Navy N45, Bureau of Ocean Energy Management (BOEM)

5. Time frame:
Activity start: 7/6/17
Activity completion: 12/9/17

Dates actively inside the Monument:
From: 7/10/17
To: 12/5/17

Describe any limiting factors in declaring specific dates of the proposed activity at the time of application: Ship tracklines not yet completed.

Personnel schedule in the Monument: see attached table. All legs except Lasker leg 1 will enter Monument waters.

6. Indicate (with attached documentation) what insurance policies, bonding coverage, and/or financial resources are in place to pay for or reimburse the Monument trustees for the necessary search and rescue, evacuation, and/or removal of any or all persons covered by the permit from the Monument:

7. Check the appropriate box to indicate how personnel will enter the Monument:

☒ Vessel
☐ Aircraft

Provide Vessel and Aircraft information: R/Vs Oscar Elton Sette and Reuben Lasker

8. The certifications/inspections (below) must be completed prior to departure for vessels (and associated tenders) entering the Monument. Fill in scheduled date (attach documentation):

Ships *Sette* and *Lasker* are covered under their own permits.

☐ Rodent free, Date:
☐ Tender vessel, Date:
☐ Ballast water, Date:
☐ Gear/equipment, Date:
☐ Hull inspection, Date:

9. Vessel information (NOTE: if you are traveling aboard a National Oceanic and Atmospheric Administration vessel, skip this question):
Vessel name:
Vessel owner:
Captain's name:
IMO#:
Vessel ID#:
Flag:
Vessel type:
Call sign:
Embarkation port:
Last port vessel will have been at prior to this embarkation:
Length:
Gross tonnage:

Total ballast water capacity volume (m3):
Total number of ballast water tanks on ship:
Total fuel capacity:
Total number of fuel tanks on ship:
Marine Sanitation Device:
Type:

Explain in detail how you will comply with the regulations regarding discharge in the Monument. Describe in detail. If applicable, attach schematics of the vessel's discharge and treatment systems:

Other fuel/hazardous materials to be carried on board and amounts:

Provide proof of a National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement-approved Vessel Monitoring System (VMS). Provide the name and contact information of the contractor responsible for installing the VMS system. Also describe VMS unit name and type:

VMS Email:
Inmarsat ID#:

* Individuals MUST ENSURE that a type-approved VMS unit is installed and that its automatic position reports are being properly received by the NOAA OLE system prior to the issuance of a permit. To make sure your VMS is properly configured for the NOAA OLE system, please contact NOAA OLE at (808) 725-6110 or (808) 725-6100.

* PERMITS WILL NOT BE ISSUED TO INDIVIDUALS ENTERING THE MONUMENT VIA VESSEL UNTIL NOAA OLE HAS CONTACTED THE MONUMENT PERMIT COORDINATOR WITH A 'POSITIVE CHECK' READING.

10. Tender information:

On what workboats (tenders) will personnel, gear and materials be transported within the Monument? List the number of tenders/skiffs aboard and specific types of motors:

Additional Information for Land Based Operations

11. Proposed movement of personnel, gear, materials, and, if applicable, samples: N/A

12. Room and board requirements on island: N/A

13. Work space needs: N/A

DID YOU INCLUDE THESE?

- ☐ Map(s) or GPS point(s) of Project Location(s), if applicable
- ☐ Funding Proposal(s)
- ☐ Funding and Award Documentation, if already received
- ☐ Documentation of Insurance, if already received
- ☐ Documentation of Inspections
- ☐ Documentation of all required Federal and State Permits or applications for permits

		Sette			Lasker			
	Bunks	Leg 1	Leg 2	Leg 3	Leg 1	Leg 2	Leg 3	Leg 4
		July 6 - August 2	August 8 - September 5	September 11-October 10	August 17 - September 5	September 11-October 10	October 16 - November 9	November 15 - December 9
		Honolulu-Honolulu	Honolulu-Honolulu	Honolulu-Honolulu	San Diego-Honolulu	Honolulu-Honolulu	Honolulu-Hilo	Hilo-San Diego
Days at sea		28	29	30	20	30	25	25
Cruise Leader	1	Erin M. Oleson	Amanda L. Bradford	Marie C. Hill	Jeff E. Moore	F. Eric Archer	Jim V. Carretta	Karin A. Forney
Sr. MMO	2	Paula A. Olson	Paula Olson	Paula Olson	Suzanne Yin	Suzanne Yin	Paula Olson	Suzanne Yin
Sr. MMO	3	Ernesto Vazquez Morquecho	Andrea Bendlin	Andrea Bendlin	Juan Carlos Salinas Vargas	Juan Carlos Salinas	Andrea Bendlin	Juan Carlos Salinas
MMO	4	Adam C. U	Adam U	Adam U	Heather Colley	Heather Colley	Heather Colley	Heather Colley
MMO	5	Allan D. Ligon	Allan Ligon	Allan Ligon	Mark P. Cotter	Mark Cotter	Mark Cotter	Mark Cotter
MMO	6	Amy M. Van Cise	Amy Van Cise	Greg S. Sanders	Bernardo Alps	Bernardo Alps	Bernardo Alps	Bernardo Alps
MMO	7	Andrea R. Bendlin	TBD	Carrie Sinclair	Jim Gilpatrick	Jim Gilpatrick	Allan Ligon	Charlotte Boyd
Birder	8	Dawn Breese	Dawn Breese	Dawn Breese	Michael P. Force	Michael Force	Michael Force	Michael Force
Birder	9	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Lead Acoustician	10	Jennifer L. Keating	Jennifer Keating	Jennifer Keating	Shannon N. Coates	Shannon Coates	Shannon Coates	Shannon Coates
Acoustic Tech	11	Erik S. Norris	Erik Norris	Erik Norris	Megan E. Slack	Megan Slack	Anne E. Simonis	Jennifer Keating
Acoustic Tech	12	Shannon Coates	Ali R. Bayless	Taiki Sakai	Jenny Trickey	Rory F. Driskell	Rory Driskell	Jessica L. Crance
Visiting scientist 1	13	Kym M. Yano (CL trainee)	Joseph E. Fader	Ann N. Allen	Seth Sykora-Bodie	Brittany L. Hancock-Hanser (	Lauren Jacobsen (eDNA)	Elizabeth D. Hetherington
Visiting scientist 2	14	Staci DeSchryver (TAS)			TBD			TBD (Navy)
Special projects	15	Amanda Bradford (PIC)						

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY PEARSON P.E.
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
POST OFFICE BOX 621
HONOLULU, HAWAI'I 96809

June 23, 2017

TO: Division of Aquatic Resources File

THROUGH: Suzanne Case, Chairperson

FROM: Maria Carnevale
Papahānaumokuākea Marine National Monument

DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT CONSERVATION AND MANAGEMENT PERMIT TO DR. ERIN OLESON AND DR. JEFF MOORE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL MARINE FISHERIES SERVICE, FOR ACCESS TO STATE WATERS TO CONDUCT SHARK REMOVAL ACTIVITIES UNDER PERMIT PMNM-2017-017.

The following permitted activities are found to be exempted from preparation of an environmental assessment under the authority of Chapter 343, HRS and Chapter 11-200, HAR:

Project Title:
Papahānaumokuākea Marine National Monument Conservation and Management Permit to Dr. Erin Oleson and Dr. John Moore, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, for Access to State Waters to Conduct Marine Mammal Conservation Activities.

Permit Number: PMNM-2017-017

Project Description:
The conservation and management permit, as described below, would allow entry and activities to occur in Papahānaumokuākea Marine National Monument including the NWHI State waters from July 1, 2017 through June 30, 2018.

The Applicants, Dr. Erin Oleson and Dr. Jeff Moore, propose to conduct Hawaiian Islands Cetacean and Ecosystem Assessment Survey (HICEAS) of the Hawaiian archipelago consisting of activities previously covered under the Managers permit. The HICEAS would estimate the abundance and distribution of cetaceans within the Hawaiian exclusive economic zone (EEZ) using visual and acoustic methods. They also would concurrently conduct ecosystem

assessments of cetacean habitat. The applicant would access the Monument on two separately permitted NOAA vessels to conduct activities throughout the Monument.

Proposed activities that would be undertaken would include: collection of visual and passive acoustic encounters to estimate cetacean abundances; collection of tissue samples to determine population structures and contaminant levels; photographing individuals encountered to evaluate population sizes and general health conditions; deployment of satellite telemetry tags and acoustic recorders to evaluate population movement and range; and collection of oceanographic data to assess the habitat in the study area.

Methods that will be employed for the above activities will include:

- Line transect surveys by the NOAA ships to collect abundance data.
- Towing of passive hydrophones to record vocalizations to help in abundance estimates, and deployment of two sonobuoys during CTD casts or when larger whales are spotted.
- Taking biopsy tissue samples using a crossbow.
- Deploying satellite tags using a small tender vessel and a tagging rifle to implant the tag.
- Performing aerial surveys using a hexacopter to collect video of certain encounters.
- Opportunistic collection of body parts from dead or stranded animals encountered during the cruise.
- Collection of oceanographic data using up to four expendable bathythermograph per day, continuous use of a thermosalinograph, and morning and/or evening CTD casts.
- Collection of fish and squid using hook-and-line gear.
- Recovery and redeployment of a HARP at Pearl and Hermes.
- Deployment and recovery of Drifting Spar Buoy Recorders which will be collected after 20-30 days of operation.

This activity directly supports the Threatened and Endangered Species (TES) Action Plan Strategy TES-2.1: *Determine the status of cetacean populations and verify and manage potential threats over the life of the plan.* (PMNM MMP Vol. 1, 2008). This specific activity is the focus of this analysis as all other activities in this permit are analyzed in the Environmental Assessment (2008) for the Monument Management Plan.

Consulted Parties:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai'i Division of Aquatic Resources, Hawai'i Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, the Office of Hawaiian Affairs (OHA), and the Cultural Working Group Permits Sub-Committee. In addition, the permit application has been posted on the Monument Web site since May 17, 2017 giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

Exemption Determination:
After reviewing HAR §11-200-8, including the criteria used to determine significance under HAR §11-200-12, DLNR has concluded that the activities under this permit would have minimal or no significant effect on the environment and that issuance of the permit is categorically exempt from the requirement to prepare an environmental assessment based on the following analysis:

1. All activities associated with this permit, including monitoring and removal of sharks, have been evaluated as a single action. As a preliminary matter, multiple or phased actions, such as when a group of actions are part of a larger undertaking, or when an individual project is precedent to or represents a commitment to a larger project, must be grouped together and evaluated as a single action. HAR §11-200-7. This permit may involve an activity that is precedent to a later planned activity, i.e. the continued assessment of marine wildlife.

2. The Exemption Class for Experimental Management with no Serious or Major Environmental Disturbance Appears to Apply. Chapter 343, HRS, and §11-200-8, HAR, provide for a list of classes of actions exempt from environmental assessment requirements. HAR §11-200-8.A.5. exempts the class of actions which involve "basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource." The proposed removal activities here appear to fall squarely under the exemption class #5, exempt item #13 as described under the Exemption List for the Department of Land and Natural Resources published on June 5, 2015. As discussed below, no significant disturbance to any environmental resource is anticipated in the assessment of marine wildlife. Thus, so long as the below considerations are met, an exemption class should include the action now contemplated.

The Applicants would follow Monument Best Management Practices (BMPs) to mitigate threats activities could have on listed species, sea birds, and terrestrial birds. The BMPs include Human Hazards to Seabirds (BMP 003), the Laysan Finch Protocol (BMP 005), Artificial Light on Sea Turtles (BMP 009), Marine Wildlife Viewing Guidelines (BMP 010), and Precautions for Minimizing Human Impacts on Endangered Land Birds (BMP 012).

3. Cumulative Impacts of Actions in the Same Place and Impacts with Respect to the Potentially Particularly Sensitive Environment Will Not be Significant. Even where a categorical exemption appears to include a proposed action, the action cannot be declared exempt if "the cumulative impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment." HAR §11-200-8.B. To gauge whether a significant impact or effect is probable, an exempting agency must consider every phase of a proposed action, any expected primary and secondary consequences, the long-term and short-term effects of the action, the overall and cumulative effect of the action, and the sum effects of an action on the quality of the environment. HAR §11-200-12. Examples of actions which commonly have a significant effect on the environment are listed under HAR §11-200-12.

This project would continue assessments on cetacean populations throughout the archipelago. Significant cumulative impacts are not anticipated as a result of this activity, and numerous safeguards further ensure that the potentially sensitive environment of the project area will not be significantly affected. All activities will be conducted in a manner compatible with the management direction of the Monument Proclamation in that the activities do not diminish monument resources, qualities, and ecological integrity, or have any indirect, secondary, cultural, or cumulative effects. The joint permit review process did not reveal any anticipated indirect or cumulative impacts that would occur as a result of these activities. These activities would be conducted from NOAA ship based platforms, separately permitted.

The research area is so vast, that the potential for significant overlap with any other permitted activity within PMNM is minimal.

4. Overall Impacts will Probably be Minimal and Insignificant Any foreseeable impacts from the proposed activity will probably be minimal, and further mitigated by general and specific conditions attached to the permit. Specifically, all conservation and management activities covered by this permit will be carried out with strict safeguards for the natural, historic, and cultural resources of the Monument as required by Presidential Proclamation 8031, other applicable law and agency policies and standard operating procedures.

Conclusion. Upon consideration of the permit to be approved by the Board of Land and Natural Resources, the potential effects of the above listed project as provided by Chapter 343, HRS and Chapter 11-200 HAR, have been determined to be of probable minimal or no significant effect on the environment and exempt from the preparation of an environmental assessment.

_____ _____

Suzanne Case
Board of Land and Natural Resources

Date