Papahānaumokuākea Marine National Monument

RESEARCH 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:
Papahānaumokuākea Marine National Monument Permit Coordinator
6600 Kalaniana'ole Hwy. # 300
Honolulu, HI 96825
nwhipermit@noaa.gov
PHONE: (808) 397-2660 FAX: (808) 397-2662

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 Name: Jay Barlow, PhD and Erin Oleson, PhD
Affiliation: NOAA National Marine Fisheries Service

Permit Category: Research
Proposed Activity Dates: 24 August 2010 through 27 November 2010
Proposed Method of Entry (Vessel/Plane): Vessels: NOAA Ship McArthur II and NOAA Ship Oscar Elton Sette
Proposed Locations: All waters of the PNMN surrounding all 10 islands/atolls

Estimated number of individuals (including Applicant) to be covered under this permit: NOAA Ship McArthur II: 24 scientists and 24 Officers and Crew; NOAA Ship Sette: 18 Scientists and 22 Officers and Crew
Estimated number of days in the Monument: Maximum possible days: NOAA Ship McArthur II: 96; NOAA Ship Sette: 55

Description of proposed activities: (complete these sentences):

a.) The proposed activity would…

The primary goal of this expedition will be to estimate the abundance and distribution of cetaceans within the Hawaiian EEZ using visual and acoustic methods. Concurrent with the abundance estimation, the expedition will conduct an ecosystem assessent of their habitat.

b.) To accomplish this activity we would ….

The 2010 Hawaiian Archipelago Cetaceans and Ecosystem Assessment Survey (HICEAS) of is a marine mammal assessment survey of the Exclusive Economic Zone (EEZ) of Hawaiian waters out to a distance of approximately 200 nautical miles. The primary objectives of HICEAS are to estimate the abundance and to understand the distribution of dolphins and whales in the Hawaiian EEZ using visual and acoustic survey methods. A secondary objective is to characterize the pelagic ecosystem within the study area, through the collection of underway and station-based physical and biological oceanographic sampling, studies of mid-trophic level organisms (using net sampling and acoustic backscatter methods) and research on non-protected

apex predators (seabirds). A final objective is to conduct biopsy sampling and photo-identification studies of cetacean species of special interest.

c.) This activity would help the Monument by …
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, Endangered Species Act and the National Marine Sanctuaries Act. This survey would provide new abundance estimates which 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.

Other information or background: The HICEAS project is in the process of establishing a long-term data series; the original survey took place in 2002. The research comprises mainly non-lethal and non-invasive visual and passive acoustic surveys. Minimal samples of zooplankton will be collected to help define cetacean habitat.

Section A - Applicant Information

1. Applicant

Name (last, first, middle initial): Barlow, Jay P. and Oleson, Erin M

Title: Dr. Barlow: Program Lead, EEZ Mammals and Acoustics; Southwest Fisheries Science Center; NOAA National Marine Fisheries Service
Dr. Oleson: Research Ecologist, Marine Mammal Research Program; Pacific Islands Fisheries Science Center; NOAA National Marine Fisheries Service

1a. Intended field Principal Investigator (See instructions for more information):
Dr. Barlow: Program Lead, EEZ Mammals and Acoustics; Southwest Fisheries Science Center; NOAA National Marine Fisheries Service
Dr. Oleson: Research Ecologist, Marine Mammal Research Program; Pacific Islands Fisheries Science Center; NOAA National Marine Fisheries Service

2. Mailing address (street/P.O. box, city, state, country, zip):

[redacted]

[redacted]

Phone:
[redacted]

Fax:

[redacted]

Email:
[redacted]

For students, major professor's name, telephone and email address: N/A

3. Affiliation (institution/agency/organization directly related to the proposed project):
Dr. Barlow: Protected Resources Division; Southwest Fisheries Science Center; NOAA National Marine Fisheries Service
Dr. Oleson: Marine Mammal Research Program; Pacific Islands Fisheries Science Center; NOAA National Marine Fisheries Service

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):
NOAA Ship McArthur II:
Jay Barlow, Chief Scientist, [redacted]
Lisa Balance, Cruise Leader, [redacted]
Karin Forney, Cruise Leader, [redacted]
Barbara Taylor, Cruise Leader, [redacted]
James Cotton, Marine Mammal Observer, [redacted]
Richard Rowlett, Marine Mammal Observer, [redacted]
Cornelia Oedekoven, Marine Mammal Observer, [redacted]
Three (3) additional Marine Mammal Observers TBD, will complete in the Compliance Logistic sheet
Michael Force, Seabird Observer, [redacted]
Sophia Webb, Seabird Observer, [redacted]
Acoustician TBD, will complete in the Compliance Logistic sheet
Two (2) Acoustic Technicians TBD, will complete in the Compliance Logistic sheet
Justin Garver, Oceanographer, [redacted]
Corey Sheredy, Oceanographer, [redacted]
Candice Hall, Oceanographer, [redacted]
Five (5) Visiting Scientists TBD (one per leg), will complete in the Compliance Logistic sheet

NOAA Ship Oscar Elton Sette
Erin Oleson, Chief Scientist, [redacted]
Marie Hill, Cruise Leader, [redacted]
Allan Ligon, Marine Mammal Observer,
Six (6) Marine Mammal Observers TBD, will complete in the Compliance Logistic sheet
Two (2) Seabird Observers TBD, will complete in the Compliance Logistic sheet

Acoustician TBD, will complete in the Compliance Logistic sheet
Two (2) Acoustic Technicians TBD, will complete in the Compliance Logistic sheet
Corey Sheredy, Oceanographer, [redacted]
Four (4) Visiting Scientists TBD (up to two per leg), will complete in the Compliance Logistic sheet

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			

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 the Kure Atoll in the in the Northwest Hawaiian Islands. 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 (see figure 1 attached). The ships will not approach closer than 1 mile from the 10-fathom isobath of any island or shoal (other than Midway). Small boats may approach closer if animals are seen from the ship, but no one will set foot on any island (other than Midway).

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 Marine Mammal Protection Act, Endangered Species Act and the National Marine Sanctuaries Act. 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.

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, national and historic resources and ecological integrity of the PMNM. This project is a continuing effort to provide cetacean abudance estimates within an ecosystem approach to management framework for the EEZ of Hawaii. The main survey methods, visual and acoustic, and most ecosystem projects are non-invasive and non-lethal; marine mammal skin biopsy and oceanographic net tows are designed to be minimally invasive and non-lethal.

To safeguard the cultural resources of the Monument, all personnel will attend a 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 (OHA) 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. This research is in concert with the objectives of the NOAA Management Plan for PMNM.

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 practical 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 the 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 and will have no adverse impact on its natural and historic resources, qualities, and ecological integrity.

e. Explain how 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 10kts. Oceanographic sampling requires a station stop of approximately 2.5 hrs daily to conduct a CTD (conductivity, temperature, depth) and perform two net tows: manta net tow (surface) for 15 minutes and a bongo net tow (to a depth of 200m) for 15 minutes.

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 in National Marine Sanctuaries, including Hawaiian sanctuaries.

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 cruise is supported by 120 seadays aboard NOAA Ship McArthur II and 55 seadays aboard NOAA ship Oscar Sette from the NOAA Office of Marine and Aviation Operations. The funding for the science is being underwritten by the Southwest Fisheries Science Center and the Pacific Islands Fisheries Science Center, of the US Department of Commerce, 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.
The research consists primarily of non-invasive visual and acoustic surveys. A limited number of plankton samples will be collected and expendable bathythermographs (XBTs) will be dropped to characterize cetacean habitat. If large whales are seen in PMNM, sonobuoys may be dropped to record their vocalization.

i. Has your vessel has been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?
NOAA Ship Sette has been equipped with NOAA OLE vessel monitoring systems; NOAA Ship McArthur II is in the process of obtaining one prior to sailing in the PMNM.

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

There are no other factors that would make the issuane of a permit for these activitires inappropriate.

8. Procedures/Methods:

Aboard each vessel:

a. Line transect survey methods will be used to collect abundance data along a designated trackline aboard the NOAA ship McArthur II. A daily watch for cetaceans will be maintained on the flying bridge during daylight hours by six 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. An occasional sonobuoy may be deployed if large whales are in the area.

c. Biopsy samples for genetic analyses of marine mammals will be collected on an opportunistic basis. The animals to be sampled will be approached by the research vessel during normal survey operations, will approach the vessel on their own or will be approached by a small boat. Samples will be collected, from animals within 10 m to 30 m of the bow of the vessel, using a dart fired from a crossbow.

d. 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 geographic variation. The animals to be photographed will be approached by the research vessel during normal survey operations, will approach the vessel on their own, or will be approached by a small boat.

e. 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 SWFSC but may be released on extended loan to recognized research institutions according to existing guidelines.

f. 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.

g. Active acoustic surveys using a scientific EK-60 depth sounder, operated continuously, at 38, 70, 120 and 200 KHz, will be interfaced to a data acquisition system to estimate micronekton biomass between 0 and 500m.

h. Oceanographic sampling during the day while underway will include four XBT drops per day, surface water sampling for chlorophyll a analysis and temperature and continuous thermosalinograph (surface water temperature and salinity) sampling. After sunset, one CTD cast will be conducted. The CTD cast will be followed by two net tows, manta and bongo, each for 15 minutes

i. 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 (<30cm DML) will be frozen for workup at the lab.

NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding, as a customized application will be needed. For more information, contact the Monument office on the first page of this application.

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:
SKIN BIOPSY SAMPLES

Common name	Scientific name	Maximum take
Minke whale	Balaenoptera acutorostrata	20
Sei whale	Balaenoptera borealis	15
Bryde's whale	Balaenoptera edeni	15
Blue whale	Balaenoptera musculus	10
Fin whale	Balaenoptera physalus	20
Pygmy killer whale	Feresa attenuata	30
Short-finned pilot whale	Globicephala macrorhynchus	30
Risso's dolphin	Grampus griseus	20
Longman's beaked whale	Indopacetus pacificus	10
Pygmy sperm whale	Kogia breviceps	5
Dwarf sperm whale	Kogia sima	5
Fraser's dolphin	Lagenodelphis hosei	20
Humpback whale	Megaptera novaeangliae	20
Mesoplodon beaked whale	Mesoplodon sp.	15
Killer whale	Orcinus orca	20
Melon-headed whales	Peponocephala electra	50
Sperm whale	Physeter macrocephalus	50
False killer whale	Pseudorca crassidens (offshore)	50
Spotted dolphin	Stenella attenuata	20
Striped dolphin	Stenella coeruleoalba	50
Spinner dolphin	Stenella longirostris	50
Rough-toothed dolphin	Steno bredanensis	30
Bottlenose dolphin	Tursiops truncatus	50
Cuvier's beaked whale	Ziphius cavirostris	10

Note: The maximum number of biopsy samples planned to be collected 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.

Bongo tow net estimated collection:

Scientific Name	Common Name	Estimated take
Abraliopsis spp.	Abraliopsis spp.	65
Ahliesaurus brevis	Ahliesaurus brevis	8
Anguilliformes	Eels	9
Anthiinae	Anthiinae	6
Argyropelecus spp.	Argyropelecus spp.	54

Benthosema suborbitale	Benthosema suborbitale	100
Bolinichthys spp.	Pipefishes	100
Bregmaceros spp.	Bregmaceros spp.	54
Callionymidae	Dragonets	18
Ceratoscopelus warmingii	Ceratoscopelus warmingii	543
Chtenopteryx sicula	Comb-finned squid	6
Cyclothone spp.	Cyclothone spp.	744
Diaphus spp.	Headlightfishes	486
Diogenichthys atlanticus	Longfin lanternfish	81
Diplophos taenia	Diplophos taenia	11
Diplospinus multistriatus	Ribbon snake mackerel	21
Disintegrated fish larvae	Disintegrated fish larvae	100
Dolicholagus longirostris	Longsnout blacksmelt	9
Encrasicholina punctifer	Buccaneer anchovy	413
Engyprosopon spp.	Engyprosopon spp.	18
Evermannella indica	Sabertooth	16
Gempylus serpens	Snake Mackerel	18
Gobiidae	Gobies	17
Gonostoma atlanticum	Atlantic fangjaw	54
Howella spp.	Pelagic basslet	21
Hyaloteuthis pelagica	Glass squid	15
Hygophum proximum	Hygophum proximum	166
Hygophum reinhardtii	Slender lanternfish	94
Idiacanthus fasciola	Idiacanthus fasciola	43
Katsuwonus pelamis	Skipjack tuna	14
Labridae	Wrasses	61
Lampadena spp.	Lampfishes	21
Lampadena urophaos	Sunbeam lampfish	31
Lampanyctus nobilis	Lampanyctus nobilis	29
Lampanyctus tenuiformis	Lampanyctus tenuiformis	23
Lestidiops indopacifica	Lestidiops indopacifica	9
Lestidiops spp.	Lestidiops spp.	31
Lestidium spp.	Lestidium spp.	20
Lobianchia gemellarii	Lobianchia gemellarii	43
Magnisudis atlantica	Duckbill barracudina	21
Melamphaes spp.	Melamphaes spp.	16
Melanostomiinae	Scaleless dragonfishes	11
Myctophidae	Lanternfishes	196
Myctophum nitidulum	Pearly lanternfish	8
Myctophum selenops	Myctophum selenops	7
Myctophum spp.	Myctophum spp.	46
Nannobrachium hawaiiensis	Nannobrachium hawaiiensis	12
Nannobrachium spp.	Nannobrachium spp.	74
Notolychnus valdiviae	Topside lampfish	85
Octopoteuthis nielseni	Octopoteuthis nielseni	11

Onychoteuthis compacta	Onychoteuthis compacta	6
Onychoteuthis spp.	Onychoteuthis spp.	11
Paralepididae	Barradcudinas	36
Parapercis spp.	Parapercis spp.	9
Pterelectris heteroptera	Indigo dartfish	40
Pterygioteuthis giardi	Roundear enope squid	17
Pyroteuthis addolux	Pyroteuthis addolux	9
Scaridae	Parrotfishes	11
Scombrolabrax heterolepis	Black mackerel	7
Scopelarchus analis	Blackbelly pearleye	34
Scopelarchus spp.	Pearleyes	37
Scorpaenidae	Scorpionfishes	11
Sigmops elongatum	Elongated bristlemouth fish	50
Sigmops spp.	Sigmops spp.	16
Sternoptyx spp.	Dollar hatchetfishes	68
Sthenoteuthis oualaniensis	Purpleback squid	47
Sudis atrox	Hideous barracudina	19
Symbolophorus evermanni	Evermann's lanternfish	67
Synodus spp.	Synodus spp.	17
Triphoturus nigrescens	Highseas lampfish	18
Unidentified	Unidentified	714
Valenciennellus tripunctulatus	Constellationfish	31
Vinciguerria nimbaria	Oceanic lightfish	1133
Vinciguerria poweriae	Highseas lightfish	156
Vinciguerria spp.	Vinciguerria spp.	19

Manta tow estimated collection:

Scientific name	Common name	Estimated take
Ceratoscopelus warmingii	Ceratoscopelus warmingii	19
Cyclothone spp.	Cyclothone spp.	111
Diaphus spp.	Headlightfishes	53
Encrasicholina punctifer	Buccaneer anchovy	27
Myctophidae	Lanternfishes	7
Pterygioteuthis giardi	Roundear enope squid	13
Pyroteuthidae	Pyroteuthidae	13
Sthenoteuthis oualaniensis	Purpleback squid	96
Tremoctopus violaceus	Commom blanket octopus	9
Unidentified	Unidentified	1536
Vinciguerria nimbaria	Oceanic lightfish	29

Scientific name:

SEE TABLE ABOVE

& size of specimens:

Number of specimens: SEE TABLE ABOVE

Biopsy: the maximum number of biopsy samples planned to be collected will not be exceeded under any conditions and is presented in the table above. 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 cm2) of skin and blubber.

No more than one gallon volume of plankton will be collected from any one tow. Plankton and nekton species are larval species. The number of specimens in the table above is based on the 2002 HICEAS manta and bongo tows; the actual number of each species is likely to vary considerably.

Collection location:
The waters of the PMNM

☒ Whole Organism ☒ Partial Organism

9b. What will be done with the specimens after the project has ended?
Biopsy samples will be archived at the SWFSC; plankton samples will be stored at the Scripps Institution of Oceanography, La Jolla, CA; most squid and fish samples will be disposed of after data collection.

9c. Will the organisms be kept alive after collection? ☐ Yes ☒ No
Collected organisms will consist of plankton, fish and squid. Planktonic samples will be preserved in formalin or frozen, labeled, and stored until the vessel returns to San Diego where they will be sorted and identified; fish and squid will be worked up at sea or in the lab at San Diego.

• General site/location for collections:
Samples will be collected in the waters of the PMNM along the tracklines proposed for HICEAS. The actuallocation on the trackline of the sample collection will depend on weather and other events. Tracklines are shown in Figure 1.

• 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 and plankton samples will be preserved in formalin to be transported out of the Monument via NOAA ships McArthur II and Sette.

11. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:
The biopsy samples will be stored at the Southwest Fisheries Science Center in order to perform genetic and steroid analyses in our laboratory 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 your scientists upon request. Plankton samples will be sorted and identified to the lowest taxon possible. Cruise Summaries and Data Reports are standard components of SWFSC cruise documentation. All reports and publications are available upon request. All results published by NOAA / NMFS / SWFSC are public record.

12a. List all specialized gear and materials to be used in this activity:
Fujinon 25X 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. Nets will be used to obtain plankton and micronekton 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. Satellite tags may be deployed on cetaceans.

12b. List all Hazardous Materials you propose to take to and use within the Monument:
Formalin as a preservative and sodium borate will be used as preservatives to fix net tow samples; acetone and hydrochloric acid will be used for chlorophyll extractions; ethanol and Triton X 100 will be used to clean portasal.

13. Describe any fixed installations and instrumentation proposed to be set in the Monument:
N/A

14. 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 (December 11, 2011).

15. List all Applicants' publications directly related to the proposed project:
Peer-reviewed Journal Publications:
Baird, R.W., D.J. McSweeney, C. Bane, J. Barlow, D.R. Salden, L.K. Antoine, R.G. LeDuc, and D.L. Webster. 2006. Killer whales in Hawaiian waters: Information on population identity and feeding habits. Pacific Science 60(4):523-530.

Baird, R.W., D.L. Webster, D.J. McSweeney, A.D. Ligon, G.S. Schorr, and J. Barlow. 2006. Diving behavior of Cuvier's (Ziphius cavirostris) and Blainville's beaked whales (Mesoplodon densirostris) in Hawai'i. Canadian J. Zoology 84:1120-1128.

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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

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

Papahānaumokuākea Marine National Monument Permit Coordinator
6600 Kalaniana'ole Hwy. # 300
Honolulu, HI 96825
FAX: (808) 397-2662

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

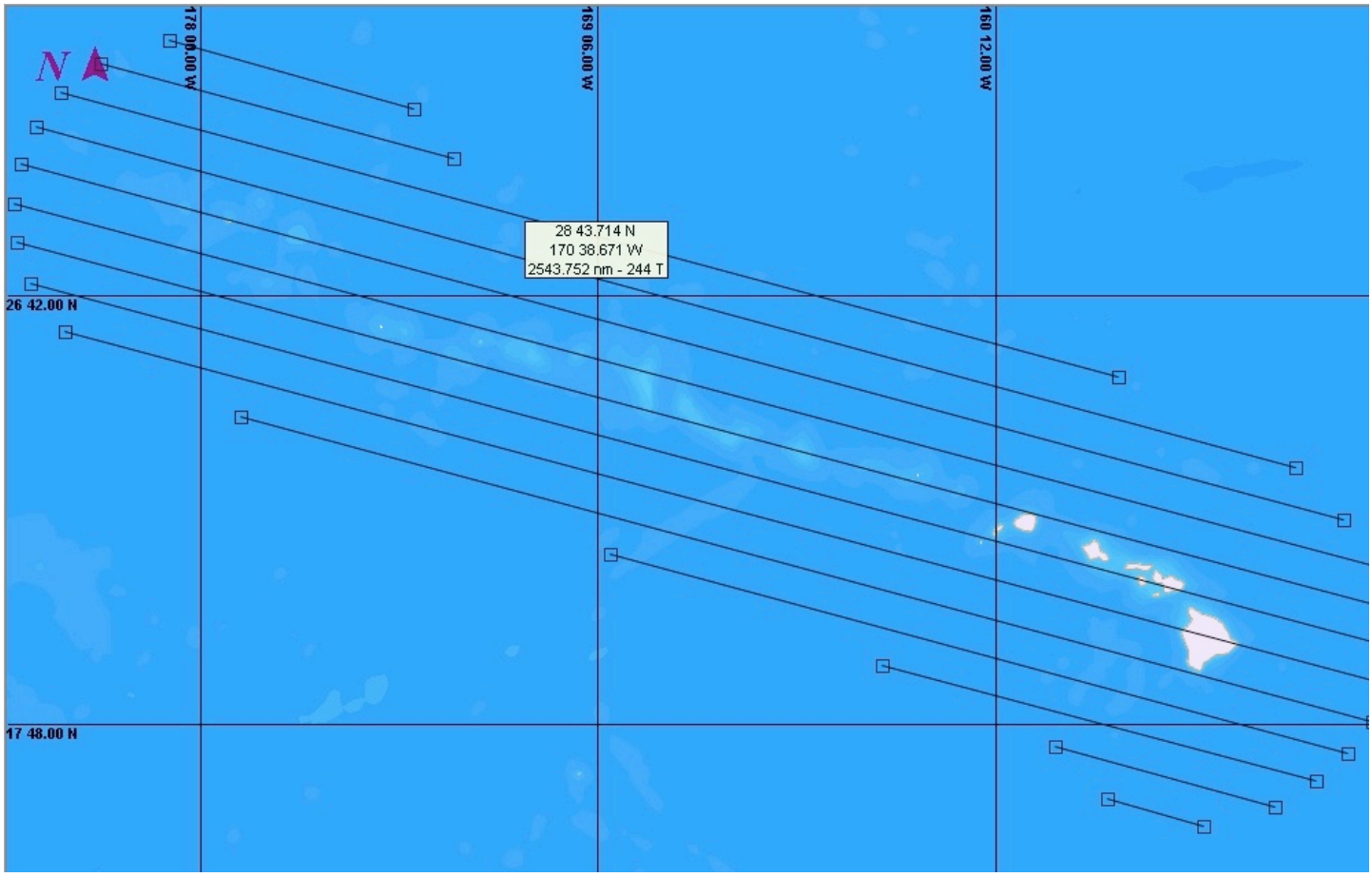

Figure 1. Geographic representation of transect lines to be conducted on HICEAS: Hawaiian Archipelago Cetacean Abundance and Ecosystem Survey.