

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: Whitlow Au

Affiliation: Hawaii Institute of Marine Biology

Permit Category: Research

Proposed Activity Dates: May 10 - June 3, 2010

Proposed Method of Entry (Vessel/Plane): NOAA ship Hi'ialakai

Proposed Locations: For Deep EARs deployment

Kure Atoll:	N28 deg 20.000'	W178 deg 13.000'
Lisianski -Pioneer Bank	N26 deg 2.000'	W173 deg 32.000'
French FS-Brooks Bank	N23 deg 55.000'	W166 deg 42.000'
Nihoa	N22 deg 54.000'	W162 deg 12.000'

For Shallow EARs to be refurbished

Pearl and Hermes Atoll2	N27.94057	W175.86171
Maro Reef	N25.41957	W170.66913
Lisiansky	N26.10010	W173.99798
KUR-Kure Atoll	N28.38171	W178.32571
MID-Midway Atoll	N28.19637	W177.37495
French Frigate Shoals2	N23.63507	W166.18554
French Frigate Shoals3	N23.76887	W166.26197
Pearl and Hermes Atoll1	N27.79096	W175.86298

Estimated number of individuals (including Applicant) to be covered under this permit:

1

Estimated number of days in the Monument: 24

Description of proposed activities: (complete these sentences):

a.) The proposed activity would...

Involve deployment of four deep EARs (Ecological Acoustic Recorders) to be moored on the bottom at approximately 400 m depth for the purpose of detecting baleen whales in Monument

waters. The items used with each EAR is a syntatic foam collar on the EAR, an acoustic release, a garage post concrete block and two sandbags.

We will also be refurbishing 8 EARs that have been deployed in shallow waters. These EARs have been collecting acoustic data on the acoustic environment of the coral reef areas in the Monument. These shallow EARs have been successful in detecting different species of dolphins, humpback whales, different species of fish. The EARs are also collecting long-term data on the level of snapping shrimp sounds throughout the Monument.

b.) To accomplish this activity we would
need a J-frame or A-frame to lift the mooring anchor (cement block and sandbag), the acoustic release and deep EAR package along with flotation form, over the side of the ship and then release the entire package and let it free dropped to the bottom.

In order to refurbish the 8 shallow EARs, divers would be need to separate the EAR from the bottom anchor (concrete block) and brought to the surface. The old battery packs will be replaced by new battery packs and the dish drive will be swapped with new ones. Then the refurbished unit will be taken down and attached to the bottom anchor.

c.) This activity would help the Monument by ...
determining the distribution of baleen whales in deep waters of the Monument using the four new deep EARs. The refurbished shallow EARs will continue to collect data on the acoustic environment of coral reefs.

Other information or background: Humpback whales have been found to migrate to the Monument from unknown locations in high latitudes. Other baleen whales are probably also present in the Monument. Its important to understand what baleen whales are present, when they are present and where in the Monument they are present. This type of information is important in terms of management of the Monument.

Section A - Applicant Information

1. Applicant

Name (last, first, middle initial): Au, Whitlow, W. L.

Title: Researcher

1a. Intended field Principal Investigator (See instructions for more information):

Anne Rosinski

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

[REDACTED]

Phone:

[REDACTED]

Fax:

[REDACTED]

Email:

[REDACTED]

For students, major professor's name, telephone and email address: Whitlow Au

3. Affiliation (institution/agency/organization directly related to the proposed project):

Hawaii Institute of Marine Biology

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):

Anne Rosinski, Field Technician, deployment of deep EARs.

Section B: Project Information

5a. Project location(s):

- | | |
|--|-------------------------------------|
| <input checked="" type="checkbox"/> Nihoa Island | <input type="checkbox"/> Land-based |
| <input type="checkbox"/> Necker Island (Mokumanamana) | <input type="checkbox"/> Land-based |
| <input checked="" type="checkbox"/> French Frigate Shoals | <input type="checkbox"/> Land-based |
| <input type="checkbox"/> Gardner Pinnacles | <input type="checkbox"/> Land-based |
| <input checked="" type="checkbox"/> Maro Reef | |
| <input type="checkbox"/> Laysan Island | <input type="checkbox"/> Land-based |
| <input checked="" type="checkbox"/> Lisianski Island, Neva Shoal | <input type="checkbox"/> Land-based |
| <input checked="" type="checkbox"/> Pearl and Hermes Atoll | <input type="checkbox"/> Land-based |
| <input checked="" type="checkbox"/> Midway Atoll | <input type="checkbox"/> Land-based |
| <input checked="" type="checkbox"/> Kure Atoll | <input type="checkbox"/> Land-based |
| <input type="checkbox"/> Other | |

Ocean Based

- | | |
|---|--|
| <input type="checkbox"/> Shallow water | <input checked="" type="checkbox"/> Deep water |
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NOTE: There is a fee schedule for people visiting Midway Atoll National Wildlife Refuge via vessel and aircraft.

Location Description:

For Deep Ears to be deployed:

Kure Atoll:	N28 deg 20.000'	W178 deg 13.000'
Lisianski -Pioneer Bank	N26 deg 2.000'	W173 deg 32.000'
French FS-Brooks Bank	N23 deg 55.000'	W166 deg 42,.000'
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For Shallow EARs to be refurbished

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French Frigate Shoals3	N23.76887	W166.26197
Pearl and Hermes Atoll1	N27.79096	W175.86298

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:*

To deploy 4 deep EARs at about 400 m depth to detect the presence of baleen whales. To refurbish 8 shallow EARs with new batteries and new laptop disk drives. The EARs record acoustic signals on a duty cycle. The acoustic signals are then used to determine the type of organisms that produce the sounds. In that way, we can obtain the distribution of different organisms, their acoustic behavior on a 24 hour basis, and their relative abundance.

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?

We will be deploying deep water sensors and will not be collecting any samples except acoustic data. We will also be refurbishing 8 shallow EARs. Therefore, no cultural, natural and historic resources and ecological integrity of the Monument will be jeopardized by our activities.

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 deployment of the four deep EARs and the refurbishing of the 8 shallow EARs are totally compatible with management direction and will not jeopardize any of the Monument cultural, natural and historic resources qualities and ecological integrity.

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.

If we want to determine the presence of different organisms within the Monuments on a long-term basis using acoustics then our recording devices need to be within the Monument.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?

There will not be any adverse impact on the Monument so our activities should be considered as harmless.

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.

The deployment of the Deep EAR should only take approximately 30 min to 1 hour and there are no reasons for us to stay in the location.

The refurbishing of the shallow water EAR will require diving to retrieve the EAR and replace the EAR. There are no reasons to remain in the area.

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

PI Whitlow Au has over 30 years of bioacoustic experience, is presently the president of the Acoustical Society of America, has published 3 books concerning marine bioacoustics, edited 2 books and has approximately 180 publications in peer reviewed journals.

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.

The field-based component of this project is supported by a 25 day allocation of ship time (5/3/10 - 6/3/10), a 30 day allocation of ship time (7/21/10 - 8/19/10) on the NOAA research vessel Hiiialakai, a line item in the budget of the Monument. Subsequent lab-based research is supported by HIMB-NWHI Coral Reef Research Partnership (NMSP MOA 2005-008/66882).

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 method we are applying, that is to record acoustic signals in different depth regime through the Monument will allow us to determine what higher tropic organisms, such as fish, dolphins and whales that inhabit the waters of the Monument. This type of information is part of the cultural, natural and historical resources and the techniques will not affect the quality and ecological integrity of the Monument.

i. Has your vessel has been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?

Yes

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

This is a continuation of research efforts that have been conducted for three years and through the entire history of the Monument. During these previous efforts, there have been no problems with permit violations by my research team, no safety issues, and no complaints of offensive behavior. In these circumstances there are no other factors that would make the issuance of the permit inappropriate.

8. Procedures/Methods:

The procedures and methods are rather simple. They consist of deploying underwater ecological acoustic recorders (EAR) in different locations and depths throughout the monument. These recorders work on a duty cycle (on and off periods) and can collect data through out a year of a daily basis. The data are subsequently analyzed with computer base algorithms that will allow us to collect long-term acoustic data on the acoustic environment of the Monument and to identify various sound producing higher tropic organisms such as fish, dolphins and whales. We are also capable of recording boat sounds from vessels that enter the monument.

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:

N/A

Scientific name:

N/A

& size of specimens:

N/A

Collection location:

N/A

Whole Organism Partial Organism

9b. What will be done with the specimens after the project has ended?

N/A

9c. Will the organisms be kept alive after collection? Yes No

N/A

• General site/location for collections:

N/A

• 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?

N/A

• Will organisms be released?

N/A

10. If applicable, how will the collected samples or specimens be transported out of the Monument?

N/A

11. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:

N/A

12a. List all specialized gear and materials to be used in this activity:

4 EARs each consists of a 4.5" diameter x 2-1/4' aluminum cylindrical housing.

4 syntactic foam floats one for each EAR.

4 acoustic releases each consists of a 4" diameter x 1.5' aluminum cylindrical housing.

4 garage post anchoring cement blocks and 8 sandbags.

scuba gear including mask, fins, air tanks.

replacement battery pack to refurbish 8 shallow EARs

12b. List all Hazardous Materials you propose to take to and use within the Monument:

N/A

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

Each of the 8 shallow EARs are already attached to cement anchoring blocks. The EARs will be disconnected from the anchoring blocks and brought to the ship and batteries will be swapped out.

14. Provide a time line for sample analysis, data analysis, write-up and publication of information:

We expect data analysis to be mostly complete in 2010-2012, and analysis of specimens is ongoing. Data analysis and write-up usually take no more than an additional year, although the turn-around time for some journals can exceed 300 days, so time to publication can still be considerable post-submission of the study.

Results from these studies are made available to Monument, FWS, and stat managers as quickly as possible. Brown-bag luncheons at HIMB allow researchers to highlight important or interesting new results and discuss them with the management personnel. In addition, we hold biannual symposia during which researchers present the most current findings from their ongoing research in the Monument. These efforts ensure that research results are provided to the Monument co-trustees as quickly as they become available.

15. List all Applicants' publications directly related to the proposed project:

•Lammers, M.O., Brainard, R.E. and Au, W.W.L (2006). "Diel trends in the mesopelagic biomass community of the Northwestern Hawaiian Islands observed acoustically". Atoll Research Bulletin, 543:391-407.

- Lammers, M.O., Brainard, R.E. and Au, W.W.L., Mooney, T.A. and Wong K. (2008). “An Ecological Acoustic Recorder (EAR) for long-term monitoring of biological and anthropogenic sounds on coral reefs and other marine habitats.” J. Acoust. Soc. Am. 123:1720-1728
- Lammers, M.O., Stieb, S., Au, W.W.L., Mooney, T.A., Brainard, R.E. and Wong, K. (In prep). “Temporal, geographic and density variations in the acoustic activity of snapping shrimp.” To be submitted to Mar. Ecol. Prog. Ser.

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