

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: Robert B. Moffitt

Affiliation: Pacific Islands Fisheries Science Center

Permit Category: Research

Proposed Activity Dates: June 2009 - July 2012 (field season each year is essentially the month of June)

Proposed Method of Entry (Vessel/Plane): NOAA Research Vessel Oscar Elton Sette

Proposed Locations: Necker Island and Maro Reef (and possible fuel dropoff to Tern Island). No fishing operations will be conducted in State of Hawaii waters.

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

12 (does not include ship's component)

Estimated number of days in the Monument: 29

Description of proposed activities: (complete these sentences):

a.) The proposed activity would...

add another year's data to a longterm resource monitoring program. It records all encountered taxa and monitors changes in abundance over years in many species of the moderate depth coral reef community including fish, invertebrates, and algae.

b.) To accomplish this activity we would

conduct lobster trapping and bottomfishing operations at Necker Island and Maro Reef. The lobster trapping operation is a set site sampling program started in 1985 where 160 lobster traps are set at depths of 15-35 fathoms each afternoon and soaked overnight. Bottomfishing operations will be conducted on the deep slopes at depths of 60-150 fathoms. Samples of otoliths, gonads, and tissue will be retained and used in on going age-and-growth, reproductive, and genetic studies.

c.) This activity would help the Monument by ... helping to define the unique community occurring in the Northwestern Hawaiian Islands. It will also provide information on interannual changes in species abundance for important coral reef species including many cryptic and nocturnal species that are under-represented in daytime visual surveys. It is also important in its ability to monitor the recovery of lobster resources after many years of commercial fishing pressure.

Other information or background: Algal material collected on the lobster traps will be collected and given to the University of Hawaii for identification. Algae is a bycatch of the lobster trapping operation, not a targeted organism. The cruise is tentatively scheduled to stop at French Frigate Shoals to offload fuel for the Tern Island field camp if needed. No other operations are scheduled for this stop.

Section A - Applicant Information

1. Applicant

Name (last, first, middle initial): Moffitt, Robert B.

Title: Fishery Biologist

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

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:

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

NOAA Fisheries, Pacific Islands Fishery Science Center

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):

Robert Moffitt, Chief Scientist; Meagan Sundberg, Technician; and 10 additional technicians to be named later (this list does not include the ship's crew).

Section B: Project Information

5a. Project location(s):

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

Ocean Based

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

Location Description:

Lobster trapping operations are conducted at set sampling sites allowing for direct comparison from year to year. All activities on this cruise will be conducted outside of State waters. Set lobster trapping sites are listed below:

Necker Island

Quad	# Strings	# Traps/ String	Position	Depth Range
2-3	10	8	Start 23°15.829'N 164°18.352'W	17-19 fathoms
			End 23°15.091'N 164°20.857'W	
	4	20	Start 23°14.143'N 164°20.783'W	20-35 fathoms
			End 23°13.966'N 164°18.938'W	
2-4	10	8	Start 23°16.457'N 164°24.234'W	16-17 fathoms
			End 23°17.218'N 164°25.792'W	
	4	20	Start 23°15.756'N 164°26.530'W	26-34 fathoms
			End 23°15.464'N 164°24.974'W	
3-2	10	8	Start 23°19.993'N 164°15.898'W	16-18 fathoms
			End 23°19.676'N 164°17.709'W	
	4	20	Start 23°21.819'N 164°16.359'W	25-35 fathoms
			End 23°20.524'N 164°15.879'W	
3-4	10	8	Start 23°22.989'N 164°26.769'W	11-14 fathoms
			End 23°23.048'N 164°28.762'W	
	4	20	Start 23°23.018'N 164°24.983'W	12-16 fathoms
			End 23°22.976'N 164°26.416'W	
3-5	10	8	Start 23°21.577'N 164°34.869'W	14-18 fathoms
			End 23°21.051'N 164°36.709'W	

	4	20	Start 23°21.736'N 164°36.713'W End 23°22.290'N 164°35.430'W	15-35 fathoms
Necker Island (Cont.)				
Quad	# Strings	# Traps/ String	Position	Depth Range
4-4	10	8	Start 23°27.882'N 164°23.938'W End 23°28.029'N 164°25.746'W	15-17 fathoms
	4	20	Start 23°27.891'N 164°21.430'W End 23°28.072'N 164°23.047'W	28-34 fathoms
4-5	10	8	Start 23°29.838'N 164°30.219'W End 23°29.429'N 164°32.472'W	15-16 fathoms
	4	20	Start 23°30.318'N 164°28.299'W End 23°31.003'N 164°29.749'W	20-35 fathoms
5-5	10	8	Start 23°31.381'N 164°33.168'W End 23°31.541'N 164°35.393'W	15-15 fathoms
	4	20	Start 23°32.939'N 164°33.916'W End 23°33.199'N 164°36.109'W	16-18 fathoms
5-6	10	8	Start 23°30.392'N 164°39.711'W End 23°30.047'N 164°42.061'W	16-16 fathoms
	4	20	Start 23°29.786'N 164°41.994'W End 23°29.587'N 164°40.838'W	28-35 fathoms
5-7	10	8	Start 23°30.090'N 164°43.961'W End 23°29.945'N 164°45.648'W	10-15 fathoms
	4	20	Start 23°29.825'N 164°43.844'W End 23°29.462'N 164°45.879'W	20-30 fathoms
5-8	10	8	Start 23°31.503'N 164°48.514'W End 23°33.974'N 164°48.840'W	17-17 fathoms
	4	20	Start 23°32.467'N 164°50.479'W End 23°33.491'N 164°51.072'W	25-35 fathoms
6-5	10	8	Start 23°36.725'N 164°34.967'W End 23°36.273'N 164°37.141'W	18-18 fathoms
	4	20	Start 23°39.489'N 164°34.922'W End 23°37.840'N 164°33.205'W	25-32 fathoms
6-6	10	8	Start 23°38.671'N 164°38.160'W End 23°38.162'N 164°40.658'W	16-16 fathoms
	4	20	Start 23°39.744'N 164°38.248'W End 23°39.937'N 164°36.955'W	25-31 fathoms
6-7	10	8	Start 23°36.916'N 164°44.490'W End 23°36.338'N 164°46.979'W	17-17 fathoms
	4	20	Start 23°37.454'N 164°47.387'W End 23°37.440'N 164°45.760'W	25-30 fathoms
Maro Reef				
2-4	10	8	Start 25°16.028'N 170°27.947'W	14-16 fathoms

Quad	# Strings	# Traps/ String	Position	Depth Range
			End 25°16.070'N 170°30.240'W	
4	20		Start 25°16.035'N 170°25.744'W	14-18 fathoms
			End 25°15.283'N 170°28.076'W	
Maro Reef (Cont.)				
Quad	# Strings	# Traps/ String	Position	Depth Range
2-6	10	8	Start 25°17.561'N 170°37.424'W	13-15 fathoms
			End 25°18.299'N 170°39.477'W	
	4	20	Start 25°17.443'N 170°38.963'W	25-35 fathoms
			End 25°16.941'N 170°39.477'W	
4-4	10	8	Start 25°25.440'N 170°23.633'W	14-16 fathoms
			End 25°25.549'N 170°25.730'W	
	4	20	Start 25°24.913'N 170°22.160'W	20-35 fathoms
			End 25°25.365'N 170°22.386'W	
4-7	10	8	Start 25°28.841'N 170°43.078'W	17-20 fathoms
			End 25°27.354'N 170°45.197'W	
	4	20	Start 25°27.028'N 170°44.838'W	18-20 fathoms
			End 25°27.789'N 170°43.639'W	
5-4	10	8	Start 25°29.569'N 170°29.509'W	11-13 fathoms
			End 25°27.778'N 170°27.854'W	
	4	20	Start 25°31.775'N 170°28.410'W	25-30 fathoms
			End 25°31.090'N 170°27.500'W	
5-6	10	8	Start 25°34.570'N 170°39.361'W	13-14 fathoms
			End 25°33.665'N 170°41.080'W	
	4	20	Start 25°33.741'N 170°38.150'W	13-14 fathoms
			End 25°34.399'N 170°36.791'W	
6-7	10	8	Start 25°37.770'N 170°45.768'W	17-18 fathoms
			End 25°36.951'N 170°47.684'W	
	4	20	Start 25°38.262'N 170°43.713'W	25-30 fathoms
			End 25°38.240'N 170°46.059'W	

Bottomfishing sites at depths between 100-300 m will be determined based on proximity to the day's lobster trapping site and suitable habitat (steep, hard bottom).

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:*

This project would continue a 20-plus year time series of lobster resource monitoring cruises to specific sites in the NWHI. The scope of this time series includes the height of the commercial fishery in the mid 1980s and the more recent years when the fishery has been closed due to uncertainty with the stock assessment model. Spiny lobster abundance at Maro Reef declined sharply in 1989 and slipper lobster abundance there has risen in an apparent compensatory manner. Now that lobster trapping is no longer occurring in the NWHI, we have the opportunity to monitor recovery of lobster stocks to an unfished level and can monitor any changes in the slipper/spiny lobster ratios at Maro Reef. In the last few years we have observed a slight moderation in the abundance of slipper lobster at Maro Reef along with what appears to be the start of a recovery of spiny lobster resources. Similarly, changes in the relative abundance of other invertebrates and fish species captured in the traps can be tracked over time.

Standardized lobster trapping methods will be used on this project allowing direct comparison of collected data with previous years. Molded plastic lobster traps will be used. Traps will be baited with 1.5-2 pounds of Pacific mackerel and soaked over night at selected sites at Necker Island and Maro Reef. All organisms captured will be counted and recorded from each trap at a geo-referenced station. Length, sex, and reproductive status will be recorded for all lobsters. Tagged lobsters will be recorded and measured.

Bottomfishing operations will be conducted using standard hook and line techniques. All organisms not required for further sampling, see sampling needs below, will be returned in the vicinity of capture.

Project objectives include:

1. Collect data on abundance and species composition of trap-captured lobsters at two banks in the NWHI to compare with results of previous years.
2. Obtain length-frequency data on spiny and slipper lobsters to compare with those of previous years.
3. Record and release any tagged lobster at the capture location.
4. Conduct bottomfishing and collect biological and morphometric data including samples (e.g otoliths, spines, and gonads).
5. Collect algae specimens for taxonomic study from material present in lobster traps.
6. Identify all organisms collected in lobster traps to species, collecting representative specimens for taxonomic identification on the rare occurrence where this is necessary.

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?

Both trapping and hook-and-line fishing operations use highly selective fishing techniques with low levels of bycatch. Since all but the few organisms retained and sampled for further studies are returned near to the capture location, impact to the ecological integrity of the resources will be minimal. Moffitt, et al. 2006 (Atoll Res. Bull. No. 543) documents little change in relative abundance and species composition in the lobster trapped community over the 20-plus years of the study which includes the period of commercial fishing. This suggests that trapping operations, particularly of the scale planned here in, have little impact on ecological integrity.

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 resources of the Monument. As mentioned above, all organisms captured, other than those listed below for further study and sampling, will be returned to the bottom near the location of capture.

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.
No feasible alternative method has been identified for collection of the required data. Visual surveys do not adequately sample nocturnal, cryptic, or sand-dwelling organisms like lobster and several crab species that are important components of the trappable community. Also, standardization of the sampling method is necessary to allow for comparisons with data collected over the last 20-30 years.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?
This cruise will add to a longterm documentation of biological diversity and provide biological information on key moderate depth coral reef species. Adverse impacts are expected to be negligible.

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.
In order to monitor the trappable community of a bank, sampling must be spread throughout the bank. To achieve this we have set sites selected across the bank. We have 14 sites at Necker and 7 at Maro Reef. One day's trapping effort of 160 traps is set at each site. Distances between sites and the time involved in hauling traps does not allow sampling more than one site daily.

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.
Robert Moffitt has been conducting lobster trapping operations in the Northwestern Hawaiian Islands since 1977 and been the Chief Scientist on most of the nearly annual lobster monitoring trips since 1985.

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 and subsequent data analyses are supported by an allocation of 30 days at sea aboard the NOAA ship Oscar Elton Sette from NOAA's Office of Marine and Aviation Operations, and funds of the Stock Assessment Program of the NOAA Fisheries Pacific Islands Fisheries Science Center.

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.

Both lobster trapping and bottomfishing operations are highly selective to their respective target species. All captured organisms are handled carefully and all but the few retained for further study are returned rapidly in the vicinity of capture.

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.

There are no other factors that would make the issuance of a permit for the activities inappropriate.

8. Procedures/Methods:

Standardized lobster trapping methods will be used on this project allowing direct comparison of collected data with previous years. Molded plastic lobster traps will be used. Traps will be baited with 1.5-2 pounds of Pacific mackerel and soaked over night at selected sites at Necker Island and Maro Reef (see above). All organisms captured will be identified to species, counted, and recorded from each trap at a geo-referenced station. Length, sex, and reproductive status will be recorded for all lobsters. Tagged lobsters will be recorded and and measured. All organisms, other than the few retained for further study, will be released in the vicinity of capture. A few strings of traps, no more than two on any day, may be set at additional sites in close proximity to listed stations, particularly deeper sites, as time allows. This will be a rare event.

Bottomfishing for deepslope snappers and groupers will be conducted at depths of 100-400 m as time allows after trapping operations are completed for the day. A total of three bottomfishing rigs will be operated off the NOAA vessel. Bottomfishing gear consists of a weighted drop line with 3-5 hooks. Hooks are baited with squid or cut fish. Sites will be selected on a day by day basis based on available time and proximity to trapping locations for that day. Bottomfishing is a secondary activity with lobster trapping being primary.

Collections will include up to 50 lobster and 200 deepslope bottomfish (including opakapaka, ehu, onaga, hapu'u, gindai, kalekale, and uku) specimens from each bank (Maro Reef and Necker Island). These specimens will be used for morphometric, reproductive, and genetic studies, and, for fishes, age and growth studies. Stomachs and gonads will be

preserved in formalin, the remaining specimens will be frozen. All will be returned to the PIFSC laboratory for processing and analysis. Algal specimens found in the lobster traps will be collected from each site, frozen, and given to Isabella Abbott (UH, Manoa) after the cruise for taxonomic evaluation.

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:

- 1) Spiny and Slipper Lobster
- 2) Bottomfish (ehu, onaga, hapu'u, opakapaka, kalekale, yellowtail kalekale, gindai, uku, butaguchi)
- 3) Algae

Scientific name:

- 1) *Panulirus marginatus* and *Scyllarides squammosus* respectively
- 2) *Etelis carbunculus*, *E. coruscans*, *Epinephelus quernus*, *Pristipomoides filamentosus*, *P. seiboldii*, *P. auricilla*, *P. zonatus*, *Aprion virescens*, *Pseudocaranx dentex*
- 3) Algae, all species

& size of specimens:

- 1) 50 of each lobster species per island/bank visited
- 2) no more than 50 of any one bottomfish species or more than 100 of all species combined per bank
- 3) all algae recovered as a bycatch of trapping operations

Collection location:

Necker Island and Maro Reef

Whole Organism Partial Organism

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

- 1) Lobster specimens are frozen at sea and returned to the PIFSC laboratory for morphometric, histological, and genetic analyses.
- 2) Bottomfish otoliths, spines, gonads, and stomachs are removed and returned to the PIFSC laboratory for processing by the PIFSC Life History Program.
- 3) Algal specimens are frozen at sea and returned to Isabella Abbott at UH Manoa.

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

• General site/location for collections:
see above

• Is it an open or closed system? Open Closed
NA

• Is there an outfall? Yes No
NA

• Will these organisms be housed with other organisms? If so, what are the other organisms?
NA

• Will organisms be released?
NA

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

Frozen or preserved in formalin

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

Algal samples collected from standard lobster trapping activities will be given to Dr. Isabella Abbott at UH Manoa.

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

Commercial plastic lobster traps and hook-and-line fishing gear

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

Formalin for bottomfish stomach and gonad samples

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

None

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

A summary of the cruise activities and catch will be provided in a PIFSC cruise report by Aug 2009.

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

None.

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