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:
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

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

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: Andrea Kimiko Kealoha
Affiliation: University of Hawaii Maui College

Permit Category: Research
Proposed Activity Dates: June 1- Aug 30, 2021, dependent on the availability of a ship
Proposed Method of Entry (Vessel/Plane): Marine Vessel (TBD)
Proposed Locations: Nihoa, FFS, LIS, LAY, PHA, MID, KUR, Gardner, Maro and Mokumanamana

Estimated number of individuals (including Applicant) to be covered under this permit: 4

Estimated number of days in the Monument: 30

Description of proposed activities: (complete these sentences):

a.) The proposed activity would…
investigate the role of oceanographic phenomena, such as upwelling, in the invasive *Chondria* (i*C*) outbreak at PHA. This project combines hydrographic measurements with stable isotope analysis of coral tissues to understand oceanographic processes that may influence the presence, growth and distribution of i*C* at PHA. While the hydrographic data provide a snapshot of *in situ* oceanographic conditions, coral tissue samples may reflect the integrated signatures of upwelling events over longer times scales, and provide information on nutrient sources and cycling within the ecosystem.

b.) To accomplish this activity, we would ….
conduct handheld CTD casts within and around PHA. Casts will be planned at defined locations and spatial intervals depending on cruise schedule and allotted time for water sampling. Discrete water samples will be collected using a Niskin bottle deployed at 1 m and 5 m. Analyses will include dissolved inorganic nutrients, carbonate chemistry, and Chl *a*. Coral tissue samples for stable isotope analysis will be collected at shallow, consistent depths within and around PHA, and in areas of both high and low i*C* cover. Stable isotope analyses will also be performed on several samples of plankton, particulate organic matter and the seawater end-members. The isotope data collected in this project will complement the algal stable isotope analyses conducted by Spalding.

c.) This activity would help the Monument by …
providing insight into the oceanographic drivers of the i*C* outbreak that has devastated the ecosystem at PHA. For example, CTD casts will generate temperature and salinity profiles that may help to identify locations for upwelling. Similarly, water samples for nutrients, carbonate chemistry and Chl *a* will also help to identify upwelling, as well as provide information on biogeochemical conditions that fuel i*C* presence, growth and distribution. Stable isotopes are useful in providing information about nutrient sources and cycling. Combined, these data will 1) provide valuable insight into the oceanographic processes that influence the presence, growth and distribution of *Chondria* at PHA, and 2) provide recommendations for targeted management and monitoring locations.

Other information or background: