

## **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:** Judith Lemus

**Affiliation:** Hawaii Institute of Marine Biology

**Permit Category:** Education

**Proposed Activity Dates:** July - Sept, 2012

**Proposed Method of Entry (Vessel/Plane):** Hi'ialakai RV

**Proposed Locations:** Nihoa/Necker; French Frigate Shoals; Gardner; Maro; Laysan; Lisianski; Pearl and Hermes; Midway; Kure

**Estimated number of individuals (including Applicant) to be covered under this permit:** 2

**Estimated number of days in the Monument:** 25

**Description of proposed activities:** (complete these sentences):

a.) The proposed activity would...  
develop the multimedia resources needed for a distance learning course offered to University of Hawai'i undergraduates. It would also provide needed visual media for existing outreach and education programs such as the marine exchange program Ecosystem Penpals, and updated photographs for important research reports and other related materials.

b.) To accomplish this activity we would ....  
conduct interviews with research scientists during the course of their field work, and film (still photography and video) both the natural resources under study and the scientists conducting the studies. Additionally, we intend to link to several schools offering opportunities for direct interactions between students and scientists working in the Monument. The PIs will connect with students via e-mail, and satellite phone. Pre-arranged Hawaii teachers will work with students to email questions daily to the researchers who will respond via email and at one set interview time via phone. Photographs will also be sent periodically to the participating teachers.

c.) This activity would help the Monument by ...

providing a much broader spectrum of the academic community (namely undergraduate students) an opportunity to learn about and better understand the NWHI and Papahānaumokuākea. The online course would provide a window into Papahānaumokuākea Marine National Monument for future scientists in Hawaii who might not otherwise have an opportunity to experience the science of this rich and important ecosystem, enhancing the conservation and education capacity of the Monument. This fulfills the direct mandate of the Monument to bring the place to the people. This activity would also build upon existing and successfully proven outreach programs and further develop materials for informal and formal education. The program emphasis will be on grades 4-6 but can be formatted to other grades and ages. State of Hawaii DOE standards and National standards will be addressed for Grades four through six. In addition, Lemus and Wiener will work with PMNM education staff Andy Collins, Wesley Byers, and Matt Limtiaco to inform them of program progress and outcomes, as well as provide access to content. We would also welcome their feedback on the overall course outline.

**Other information or background:** The principals on this permit both have extensive experience developing marine science curricula and university-level courses. Dr. Lemus is a trained marine biologist and has taught marine biology courses at both the undergraduate and graduate levels. Carlie Wiener also has had extensive experience working with the management of Papahānaumokuākea as the outreach and research specialist for the HIMB partnership. At the tenth anniversary of the designation of the Northwest Hawaiian Islands Coral Reef Ecosystem Reserve, the managers stated that it is time to share the wonder of the place and the exemplary scientific research that serves as the model for effective science-management collaboration. The proposed course, "Science and Management of the Northwest Hawaiian Islands" would engage students in a virtual exploration of the islands, their flora and fauna, and the science that is being used to better understand and manage the ecosystem. Potential course topics include: Coral Reef Habitats; Comparison of MHI and NWHI Ecosystems; Marine Ecology Field Techniques; Population Genetics; Ecological Genomics; Overview of Marine Management History and Strategies; Papahānaumokuākea Management Objectives and Strategies; Ecosystem-based Management; What can the Science Tell Us?; Collaborations among Scientists, Cultural Practitioners and Managers; Applications and Extrapolations to other Pacific MPAs. The importance of this place historically and culturally will be integrated into course content. Dr. Lemus has been working with colleagues in ocean sciences, education, and Hawaiian studies, to integrate traditional knowledge and ways of knowing into courses that teach educators how to more effectively communicate about ocean sciences. Through the NSF Centers for Ocean Sciences Education Excellence effort in Hawaii, Dr. Lemus recently (June 4-5, 2011) organized a two-day workshop in Hilo that focused on integrating Western and Hawaiian modes of inquiry into science instruction.

This class will also tie into the already existing Papahānaumokuākea community education course "Moku o Lo'e: The Best Kept Secret in Kane'ohe Bay". This course has been running for eight semesters and has shared the science and beauty of the NWHI with over 200 participants. The course will continue to share the unique research coming out of the Monument with the community, but after eight semesters is in need of course revision and fresh material. Having the ability to document new research, obtain photo and video footage and gather collective

experiences will help to formulate new curriculum not only for the two above mentioned classes but for other outreach and education programs as well.