

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: Carl Meyer

Affiliation: Hawaii Institute of Marine Biology

Permit Category: Research

Proposed Activity Dates: June 1-August 31 2009

Proposed Method of Entry (Vessel/Plane): Vessel

Proposed Locations: Shallow water habitat (<100m) around all NWHI locations

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

8

Estimated number of days in the Monument: 90

Description of proposed activities: (complete these sentences):

a.) The proposed activity would...

(i) Quantify the movements of sharks at French Frigate Shoals (FFS) Atoll to improve our understanding of shark predation on Hawaiian monk seals.

(ii) Quantify the movements of ulua (*Caranx ignobilis*), hapu'upu'u (*Epinephelus quernus*) and ono (*Acanthocybium solandri*) to determine (1) whether they move between atolls, (2) how extensively they move within atolls and (3) whether their patterns of movement reveal spawning migrations and habitats.

b.) To accomplish this activity we would

Equip large sharks and predatory fishes with electronic tags, and monitor their movements using acoustic receivers (deployed on the sea floor) and satellites. Sharks will be captured using handlines and 10 hook bottom-set lines, restrained alongside a small boat during transmitter attachment and then released. Large fishes (ulua, ono, hapu'upu'u) will be captured using handlines and either tagged alongside a small boat (ulua, ono), or in situ on the sea floor by SCUBA divers (hapu'upu'u). Acoustic receivers are deployed and recovered by SCUBA divers, and listen year-round for predators equipped with acoustic tags.

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

(i) Component 1 of our research will provide Monument managers with empirical data on shark movement patterns at FFS. This information is vital for a better understanding of shark predation on Hawaiian monk seals and selecting appropriate management strategies for mitigating predation impacts on monk seals.

(ii) The second component of our research will provide Monument managers with information on the movements patterns and spawning habitats of three culturally and ecologically important top predators, one of which (hapu'upu'u) is also the only endemic Hawaiian grouper.

Other information or background: Our research has minimal impact on monument resources. Predators are captured, tagged and released at their capture locations. Our listening stations (acoustic receiver + moorings) are designed to have minimal substrate impact and leave nothing behind when they are removed. We are working with the Office of Hawaiian Affairs to seek guidance on how to mitigate potential cultural impacts associated with our research. Heidi Guth (OHA) previously recommended discussing potential cultural impacts of our proposed research with William Aila. We will be contacting Mr. Aila to discuss these issues.