

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: Annette W. Tagawa

Affiliation: State of Hawaii, Department of Land & Natural Resources, Division of Aquatic Resources

Permit Category: Research

Proposed Activity Dates: May 1st-Nov 1st 2012

Proposed Method of Entry (Vessel/Plane): Vessel and Plane

Proposed Locations: Midway and Kure

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

8

Estimated number of days in the Monument: 180

Description of proposed activities: (complete these sentences):

a.) The proposed activity would...

Develop a better biological understanding of the moi aka Pacific threadfin, *Polydactylus sexfilis*, in relation to 1) the genetic structure of these two species between the Monument and the Main Hawaiian Islands, 2) contributing to a broader understanding of Monument ecology and population dynamics of this species and 3) Determine whether stock enhancement activities within the Main Hawaiian Islands has altered the genetic population structure by utilizing Monument wild stocks as a comparison.

b.) To accomplish this activity we would

Collect small, non-lethal fin clip tissue samples from 50 *P. sexfilis* for DNA analysis to determine if these two populations possess significant genetic structure between the Main Hawaiian Islands and the Monument, in reference to parallel research activities conducted in the MHI.

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

Providing Monument managers with baseline information on the population structure of *P. sexfilis* within the Monument and how it relates to the population structure of *P. sexfilis* within the Main Hawaiian Islands. This information will provide understanding of the Monument's open system and how these resources geographically relate to the moi resources in the MHI. All of this information will enhance management decisions for these culturally and ecologically important species for both the MHI and the Monument.

Other information or background:

The family Polynemidae consists of 38+ species known from the areas of French Polynesia to Mauritius, Seychelles, Kenya and many islands of the northern Indian Ocean. Only one species, *Polydactylus sexfilis*, is listed as occurring in the Hawaiian Archipelago. Known as the Pacific Threadfin or moi, this species is a very desirable food fish locally accounting for its high market value. It was so highly prized in Hawaiian culture that centuries ago, moi were strictly reserved for the ali'i or Hawaiian royalty. Juveniles (moi'lii) and adults inhabit the surf zone, reef faces and sandy areas across the Hawaiian Islands. Due to the ecological and economic importance of *P. sexfilis*, concerns have been raised over population reductions around the Hawaiian Islands due to overfishing as well as varying indirect anthropogenic stresses (i.e., eutrophication, habitat change, the proliferation of invasive species, etc.). This has spurred efforts toward developing a better biological understanding of these species.