

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: Dr Jennifer Lavers

Affiliation: Institute for Marine & Antarctic Studies/Plastic Oceans Foundation

Permit Category: Research

Proposed Activity Dates: June 2012 - July 2013

Proposed Method of Entry (Vessel/Plane): Plane

Proposed Locations: Midway Island, Tern Island (FFS)

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

5

Estimated number of days in the Monument: 10

Description of proposed activities: (complete these sentences):

a.) The proposed activity would...

Enable the applicant to collect feather samples from Midway Island seabirds (particularly Laysan Albatross) to be tested for trace metals (in relation to plastic load). This information will be analysed and presented in the Plastic Oceans documentary, and will also likely be published as part of a (newly established) research collaboration with Drs. Collin Eagles-Smith (USGS), Michael Fry (USFWS), and Alexander Bond (USASK).

b.) To accomplish this activity we would

Freshly dead, juvenile seabirds will be necropsied. Species covered under Dr Lavers' MBTA permit include Laysan (LAAL) and Black-footed Albatross, Christmas and Wedge-tailed Shearwaters, and Bonin Petrels. As LAAL are the primary target species, and the only species likely to be in great abundance (dead carcasses), the proposed sample size is 40 birds. Other species will be 10 individuals or less.

Ten breast feathers will be collected from each bird for trace metal analysis using inductively coupled plasma mass spectrometry (ICP-MS). Plastic items recovered from inside the birds' stomachs will also be collected and sent to USGS in Oregon for trace metal analysis using FTIR spectroscopy.

Entrance into the Midway Island Monument would occur under an existing permit (Permittee Ruxton, Plastic Oceans Foundation). Samples will be retained by USFWS staff on Midway and Tern Islands, as authorised, and made available for analysis once all permits have been approved.

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

This research will contribute to the Monument through providing additional information on the impacts of plastic pollution, particularly the less visual impacts (ie. contaminants) that are more difficult to detect and quantify.

Other information or background:

Please see my www.jenniferlavers.org/plastic-pollution

Also see: Bond AL and Lavers JL. 2011. Contemporary trace element concentrations in Flesh-footed Shearwater (*Puffinus carneipes*) feathers from across their breeding range. Archives of Environmental Contamination and Toxicology 61: 318-326