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. Kelly Gleason
Affiliation: Papahanaumokuakea Marine National Monument

Permit Category: Conservation and Management
Proposed Activity Dates: 4/1/2009-9/10/2009
Proposed Method of Entry (Vessel/Plane): Vessel (Hi'ialakai for ship surveys), plane for remote sensing at Midway
Proposed Locations: French Frigate Shoals, Maro Reef, Pearl and Hermes Atoll, Midway Atoll, Kure Atoll

Estimated number of individuals (including Applicant) to be covered under this permit: 7
Estimated number of days in the Monument: 70

Description of proposed activities: (complete these sentences):

a.) The proposed activity would…
The annual PMNM maritime heritage resources cruise will conduct activities to fulfill Monument management activities including: 1) non-invasive wreck site assessment survey of selected maritime heritage sites; 2) non-invasive remote sensing survey (magnetometer and side scan sonar) and snorkeler towboard survey of high potential wreck site areas 3) recovery of a selected artifact from shipwreck sites at French Frigate Shoals (Section 106 compliance pending) for the purposes of education, outreach and research and identification and 4) monitoring of known shipwreck and sunken aircraft sites for the purposes of understanding impacts and changes to maritime heritage sites. The first acitivity is a detailed investigation of a single wreck or archaeological site; the second is a broader search for previously un-located and undiscovered resources, the third allows for identification and inventory of maritime heritage sites, and the fourth will work to develop archaeological, observational and ecologically based methods of interpreting and monitoring maritime heritage sites in the NWHI.

b.) To accomplish this activity we would ….
This project is part of a continuing effort to conduct maritime heritage management activities in the Monument including inventory, and documentation of sites. Comprehensive non-invasive

assessment surveys of previously located wreck sites allow managers to compile an inventory of critical and non-renewable historic resources. Of the possible 126 shipwreck and historic aircraft lost in the area, 20 have been confirmed by field investigation. To date inventory surveys of eight of these 24 have been completed in the NWHI. Maritime heritage summaries of site surveys are available at http://sanctuaries.noaa.gov/maritime. A simple low impact technique known as "baseline trilateration" is used to map wreck sites (see Methods). Sites selected for initiating non-invasive survey in 2009 include and unidentified whaling ship at French Frigate Shoals, the British collier Dunnottar Castle (1886) and the British whale ship Gledstanes (1837) at Kure Atoll. Sites selected for environmental assessment include the British whalers Pearl and Hermes (1822) at Pearl and Hermes Atoll, the large wooden schooner Churchill (1917) at French Frigate Shoals, the British collier Dunnottar Castle (1886) at Kure Atoll and the submarine rescue vessel Macaw (1944) at Midway Atoll in addition to the sunken WWII era Corsair plane at Midway Atoll. Alternate site surveys include the Liberty ship Quartette at Pearl and Hermes Atoll (see Maps attached).

Remote sensing survey, the second basic method proposed for the 2009 survey, locates anomalies and potential maritime heritage resources for subsequent "ground-truth" site assessments. Generally areas in the seaward vicinity of the reef crest are chosen for initial remote sensing survey due to the high potential for wreck remains in those areas. Specific reef crest zones are determined by historical records of wreck events. The 2009 remote sensing survey will be conducted with a Klein Model 3000 side scan sonar and Marine Magnetics Explorer Mini Magnetometer. The side scan sonar will be used during searches for sunken aircraft sites at Midway Atoll, and will effectively image the sandy seafloor areas explored in the atoll. The magnetometer will be used for shallow (<100 ft.) surveys at Midway. Alternatively, snorkeler tow boarding may be used to locate potential heritage resource sites in a similar manner.

Diagnostic artifacts are helpful for wreck site identification. Additionally, artifacts become invaluable means of education and outreach for the public, particularly for remote sites that visitors may never get to visit. Recovery, conservation and display of tryworks bricks will assist maritime heritage managers in confirming the identity of the shipwreck sites and provide an important artifact to be shared with the public, adding to interpreting the site and history of the Monument. Removal consists of collecting the selected bricks from the surface of the hard bottom substrate, placing them into a padded container underwater and carefully transporting them to the dive boat and main vessel. No sediment or substrate will be moved or disturbed in the process (artifacts are not buried). All artifact recovery activities will be conducted according to strict protocol and with the highest level of sensitivity to natural, cultural and historic resources.

Thus far, biological assessments of shipwrecks upon the environment have been largely subjective, and no strategy for extracting measurable biological or environmental data from these sites in the field has been established. Evaluation of shipwrecks as enviornmental threats has been limited in the Pacific to ships that are intertidal (Helton, 2003) or have grounded on a coral reef (Maragos, 1994), thus limiting our understanding of the way that shipwreck sites interact with the environment at different depths and in different substrate in the NWHI. 2009 survey work also includes an pilot study to environmentally assess maritime heritage sites in the

Northwestern Hawaiian Islands as a means to develop a long term monitoring strategy based up on environmental factors. This study will help to characterize the shipwreck sites as environmental resources, which is a gap in resource management in PMNM.

c.) This activity would help the Monument by …

2009 maritime heritage project data (site survey, remote sensing, artifact recovery and monitoring) will contribute to the management inventory for the PMNM, as well as provide the program material for education and outreach efforts. Certain data generated by the survey is sensitive and will be protected from unregulated public distribution as determined by the PMNM (also see NHPA section 304). Maritime heritage survey will be conducted in compliance with the appropriate preservation regulations (National Historic Preservation Act, Archaeological Resources Protection Act, Antiquities Act, Sunken Military Craft Act et al) and satisfies federal and state mandates for heritage resource inventory of controlled waters. Monitoring work at maritime heritage sites in 2009 will assist managers in better understanding the interaction between these sunken sites and the ecosystem, as well as help to develop an understanding of their structural integrity. 2009's study will serve as a pilot project for the further development of a shipwreck monitoring protocl for maritime heritage sites in the NWHI.

Other information or background: The 2009 maritime heritage survey is a multidiciplinary project including efforts to further inventory and assess shipwreck sites in the NWHI, and share these findings with the public in a responsible manner. Work in 2009 will serve to explore, further investigate and environmentally assess the maritime heritage sites in the Monument.

Maritime archaeology is by nature an interdisciplinary science, and the 2009 survey will further demostrate that fact. NOAA's Maritime Heritage Program was initiated in 2002. Currently, NOAA's Maritime Heritage Program is the only agency engaged in maritime heritage survey in the PMNM.

Over 60 shipwrecks have been reported lost in the PMNM, some dating back to 1805. Many of these wrecks may be important cultural or historical resources, capturing information about the maritime history of the region. Sites may furnish information about western seafaring, as well as Native Hawaiian seafaring, for many historic ships (such as whalers) recruited Native Hawaiians as skilled crew members. However, there are very few completed site assessments for the NWHI; the compilation of the resource database has just begun. Due to the time required for careful site survey and the logistical constraints of research cruises, often only portions of the required mapping/survey work at each site can be completed during each season. Completed site assessments are the most effective heritage resource survey tool.

Survey work in 2009 will continue upon efforts begun in 2002. Subsequent work continued in 2003, and then annually since 2005. The planned survey work to be conducted in 2009 will continue these efforts, focusing on non-invasive non-excavation data recording at selected heritage sites at Kure, Midway, Pearl and Hermes Atoll, and French Frigate Shoals, as well as

the recovery of diagnostic artifacts from a shipwreck site at French Frigate Shoals (Section 106 compliance pending).

Without an understanding of the resource base, without an accurate inventory of significant heritage material, maritime heritage resource management is impossible. Historic shipwrecks are subject to natural deterioration as well as intentional or inadvertent damage (dredging, looting, re-use). The first step in management is to create a resource inventory by confirming identification of sites. The next step is to conduct site assessment, characterizing the nature of the resource. Inventory and assessment are heritage preservation actions common to a number of federal and state programs. The 2009 research therefore supports cultural and historical management efforts on behalf of the different agencies of the Monument Management Board. This survey specifically addresses mandates for maritime heritage resource inventory as stated in the the draft PMNM Management Plan. 2009 work will also include an education and outreach effort.