Papahānaumokuākea Marine National Monument

CONSERVATION AND MANAGEMENT Permit Application

NOTE: ***This Permit Application (and associated Instructions) are to propose activities to be conducted in the Papahānaumokuākea Marine National Monument. The Co-Trustees are required to determine that issuing the requested permit is compatible with the findings of Presidential Proclamation 8031. Within this Application, provide all information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Papahānaumokuākea Marine National Monument (Monument).***

ADDITIONAL IMPORTANT INFORMATION:

- Any or all of the information within this application may be posted to the Monument website informing the public on projects proposed to occur in the Monument.

- In addition to the permit application, the Applicant must either download the Monument Compliance Information Sheet from the Monument website OR request a hard copy from the Monument Permit Coordinator (contact information below). The Monument Compliance Information Sheet must be submitted to the Monument Permit Coordinator after initial application consultation.

- Issuance of a Monument permit is dependent upon the completion and review of the application and Compliance Information Sheet.

INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED

Send Permit Applications to:
Papahānaumokuākea Marine National Monument Permit Coordinator
6600 Kalaniana'ole Hwy. # 300
Honolulu, HI 96825
nwhipermit@noaa.gov
PHONE: (808) 397-2660 FAX: (808) 397-2662

SUBMITTAL VIA ELECTRONIC MAIL IS PREFERRED BUT NOT REQUIRED. FOR ADDITIONAL SUBMITTAL INSTRUCTIONS, SEE THE LAST PAGE.

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 Keogh
Affiliation: Papahanaumokuakea Marine National Monument

Permit Category: Conservation and Management
Proposed Activity Dates: 7/25/2015-7/24/2016
Proposed Method of Entry (Vessel/Plane): Vessel and Plane
Proposed Locations: Nihoa, Mokumanamana, Lisianski, Laysan, French Frigate Shoals, Pearl and Hermes Atoll, Midway Atoll, Kure Atoll, Maro Reef, Gardner Pinnacles

Estimated number of individuals (including Applicant) to be covered under this permit: 5
Estimated number of days in the Monument: 30

Description of proposed activities: (complete these sentences):

a.) The proposed activity would…
This activity aims to achive goals to manage, interpret and protect maritime heritage resources in PMNM. In 2015 work will include maritime heritage efforts during an annual research expedition. Maritime heritage will act as a "piggyback" mission on the annual, PMNM-led RAMP expedition.

Annual PMNM maritime heritage resource management activities conducted during the expedition will fulfill Monument management activities including: 1) non-invasive wreck site assessment survey of selected maritime heritage sites, and 2) continued monitoring of known shipwreck and sunken aircraft sites for the purposes of understanding impacts and changes to maritime heritage sites.

Acitivites will also focus on survey and exploration for new maritime heritage sites including: 3) ground truthing of selected dive targets for potential shipwreck and sunken aircraft sites at Midway Atoll, 4) exploration for new maritime heritage sites through non-invasive remote sensing survey (magnetometer) and/or snorkeler towboard survey, and SCUBA and snorkeler suvery using scooters in high potential wreck site areas (at all islands and atolls listed on this permit), and 5) non-invasive terrestrial survey of Lisianski Island, Laysan and Kure Atoll for the

purposes of determining the feasibility of future archaeological survey of areas of propable shipwreck survivor camps.

Activities will also be conducted for the purpose of site identification, education and outreach relative to research objectives including 6) the video documentation of maritime heritage sites in order to create edited short videos about maritime heritage in PMNM and broadcast to shore based audiences, and share this very remote place with the public.

The first activity is a detailed investigation of a single wreck or archaeological site. It will assist in the creation and distribution of important outreach and education products related to maritime heritage sites that will aid in interpretation, protection and preservation of the significant sites. Additionally, this activity will assist in the continued development of PMNM maritime heritage themed exhibits and other outreach products. The second activity will work to test archaeological, observational and ecologically based methods of interpreting and monitoring maritime heritage sites in the NWHI.

The third and fourth activities describe efforts towards broader searches for previously un-located and undiscovered resources and allows for identification and inventory of maritime heritage sites. These activities are non-invasive underwater survey for new shipwreck and sunken aircraft sites. Ground truthing will only take place at Midway Atoll, and survey for new sites and continued survey of known sites will take place at all atolls listed on this permit application.

The fifth activity will assess the feasibility of an activity (survey and study of shipwreck survivor camps) that is described in the PMNM Maritime Heritage Research, Education and Management Plan that will add an important land dimension to the maritime heritage stories of Lisianski Island, Laysan and Kure Atoll. Archival research has shown these three islands (Kure, Lisianski and Laysan) to have had reported shipwreck survivor camps. To date, no field research has been conducted to survey or document these potential sites since a survey in 2002, and this project proposes a feasibility study for survey at the reported areas of these shipwreck survivor camps on land. All potential survey sites are at the highest level of ground within the island and no survey will take place near any grounds where protected species (monk seals or turtles) may haul out. This survey will avoid any areas where monk seals or turtles are resting or swimming nearby.

The final (6th) activity to develop short film pieces builds upon ongoing efforts to bring this very remote "place to the people" through the medium of film.

b.) To accomplish this activity we would ....

This project is part of a continued effort to conduct maritime heritage management activities in the Monument including exploration for new sites that will contribute to the PMNM inventory (an ONMS annual Maritime Heritage performance measure requirement), and documentation and interpretation of known maritime heritage sites. Comprehensive non-invasive assessment surveys of previously located wreck sites allow managers to compile an inventory of critical and non-renewable maritime heritage resources. Of the possible 126 shipwreck and historic aircraft lost in the area, 22 have been confirmed by field investigation. To date, surveys of twelve of

these 22 have been completed in the NWHI. Maritime heritage summaries of site surveys are available at http://www.papahanaumokuakea.gov/maritime/welcome.html and upon request to the Monument Maritime Heritage Coordinator. A simple low impact technique known as "baseline trilateration" is used to map wreck sites (see Methods) in addition to extensive photo and video documentation of all sites.

Remote sensing survey (the fourth activity described), locates anomalies and potential maritime heritage resources for subsequent "ground-truth" site assessments. Data gathered from remote sensing work in 2010 and 2012 will be used for the purposes of mapping seafloor habitat in addition to survey for maritime heritage resources. 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. Alternatively, snorkeler tow boarding or SCUBA diving or snorkeling with a scooter may be used to locate potential heritage resource sites in a similar manner in the event that funding for magnetometer survey does not happen. (Magnetometer work is funding and personnel dependent). Snorkel towboarding has been a highly successful survey method in the NWHI to date. Scooter survey is a newer method that will allow divers to eliminate being tethered to the small boat, in hopes of improving safety and effectiveness of survey.

To date, minimal terrestrial survey has taken place primarily due to time constraints while on these expeditions. In 2015, the team will carefully examine the terrestrial environment for the feasibility of future archaeological surveys at Lisianski, Laysan and Kure Atll. With guidance from field camp staff, the team will look to add an interesting terrestrial dimension to the shipwreck survivor stories of the Northwestern Hawaiian Islands. All survey will be non-invasive and focus on developing low impact methods of gathering data from a ground survey. The team will run test survey lines with a metal detector and take photographs, video and create site maps.

Monitoring activities will be conducted in 2015 utilizing archaeological, observational, and environmental parameters. The annual assessment and monitoring of maritime heritage sites for change is an important component of long term protection. The 2009 and 2010 surveys conducted by Derek Smith on shipwreck sites in the Monument helped to establish an important baseline dataset to advance interdisciplinary monitoring efforts at maritime heritage sites in the NWHI. Efforts in 2012 by Susie Holst of NOAA's CRCP helped to develop parameters for monitoring activities that will help to inform the investigation of such issues as the effects of climate change on heritage sites.

c.) This activity would help the Monument by …

2015 maritime heritage project data (site survey, outreach product development, exploration, and monitoring) will contribute to the management inventory for the PMNM, as well as provide the program invaluable material for ongoing education and outreach efforts. Exploratory survey, specifically the terrestrial survey will assist in meeting goals and objectives describes in the

Monument's Maritime Heritage Research, Education and Management Plan. Monitoring work at maritime heritage sites in 2015 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. 2015's monitoring efforts at shipwreck sites will continue a project initiated in 2009 and will assist in better understanding the changes occuring at these sites. 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.

Other information or background:

The 2015 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.

Currently, NOAA's Maritime Heritage Program is the only agency engaged in maritime heritage survey in PMNM.

Over 60 shipwrecks have been reported lost in 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. 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 because they allow managers to fully understand the sites they are mandated to protect, and determine appropriate action for protection and public outreach.

Survey work in 2015 will continue upon annual efforts initiated in 2002 with the first maritime heritage resource survey in the Northwestern Hawaiian Islands. Subsequent work continued in 2003, before becoming annual in 2005. The planned survey work to be conducted in 2015 will continue these efforts, and focusing on non-invasive data recording at selected heritage sites at Midway, Pearl and Hermes Atoll, Lisianski, Kure Atoll, Maro Reef, Laysan and French Frigate Shoals. Specifically, efforts in 2015 will follow up on work initiated in 2014 and focus on further exploration and survey for Battle of Midway related resources in order to work towards completing the inventory of resources at Midway Atoll, as well as the completion of the documentation of a mystery shipwreck site at Lisianski Island. Work at other atolls will focus upon the continued survey for new maritime heritage sites.

Midway survey will continue to explore sunken aircraft associated with the Battle of Midway adding an important maritime heritage component to our understanding of the broader history of

World War II in the Pacific. The material culture associated with this Battle is critical to understanding connections and making comparisons between Pacific regions, and better comprehending the Pacific Front of WWII. Sunken aircraft represent the tangible evidence of our nation's naval maritime and aviation legacy and hold potential for engaging the public as well as the application of cutting edge technology and multidisciplinary survey. This project proposes to investigate remaining magnetometer anomalies, potentially collect and ground-truth additional magnetometry data, survey for new sites utilizing scooters and/or towboarding survey and make discoveries that enrich the maritime and aviation history of Midway Atoll. The success of this project's exploration is increased through a newly applied refined methodology of combined oral history research and remote sensing. Further, the multidisciplinary nature of the project is exemplary in the comprehensive nature of the research, from exploration to interpretation and dissemination, and inclusive of remote sensing, archaeological, and biological survey through advanced technologies.

Work at Lisanski Island will continue work that was incomplete during the 2014 field season due to time constraints in the field. This includes non-invasive, in situ documentation of a mystery shipwreck site discovered in 2010, exploration for several shipwreck sites lost around the Island, and the investigation of Lisianski Island for the future potential of non-invasive terrerstrial archaeological survey for remains of at least two shipwreck survivor camps reported there (whaling ships Holder Borden and Konohasset). Terrestrial survey in 2015 is important in order to determine the feasibiliy of planning for a more thorough future terrestrial survey of Lisianski Island in subsequent years.

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 2015 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 PMNM Management Plan and PMNM Maritime Heritage Research, Education and Management Plan. 2015 work will also include significant education and outreach initiatives and a focus on exploration at Midway Atoll and the connection between submerged and terrestrial sites at Lisianski and Kure Atoll.

Section A - Applicant Information

1. Applicant

Name (last, first, middle initial): Keogh, Kelly, A. G.

Title: Maritime Heritage Coordinator, Papahanaumokuakea Marine National Monument

1a. Intended field Principal Investigator (See instructions for more information):
Dr. Kelly Gleason

2. Mailing address (street/P.O. box, city, state, country, zip): [redacted]

For students, major professor's name, telephone and email address:

3. Affiliation (institution/agency/organization directly related to the proposed project):
PMNM/NOAA/ONMS

4. Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Research Diver; Jane Doe, Field Technician):
1) Andy Collins (education outreach/support diver)
2) TBD (research diver/maritime archaeologist
3) TBD (research diver/maritime archaeologist)
4) TBD (research diver/maritime archaeologist)

Section B: Project Information

5a. Project location(s):

		Ocean Based	
☒ Nihoa Island	☐ Land-based	☒ Shallow water	☐ Deep water
☒ Necker Island (Mokumanamana)	☐ Land-based	☒ Shallow water	☐ Deep water
☒ French Frigate Shoals	☐ Land-based	☒ Shallow water	☐ Deep water
☒ Gardner Pinnacles	☐ Land-based	☒ Shallow water	☐ Deep water
☒ Maro Reef			
☒ Laysan Island	☒ Land-based	☒ Shallow water	☐ Deep water
☒ Lisianski Island, Neva Shoal	☒ Land-based	☒ Shallow water	☐ Deep water
☒ Pearl and Hermes Atoll	☐ Land-based	☒ Shallow water	☐ Deep water
☒ Midway Atoll	☒ Land-based	☒ Shallow water	☐ Deep water
☒ Kure Atoll	☒ Land-based	☒ Shallow water	☐ Deep water
☐ Other			

NOTE: There is a fee schedule for people visiting Midway Atoll National Wildlife Refuge via vessel and aircraft.

Location Description:

Special note: specific location (latitude/longitude) for historically significant heritage resources is sensitive data—not to be distributed publicly. Locations for 2015 maritime heritage work have been provided to the Monument Permit Coordinator.

All survey (land and underwater) will only take place during daylight hours.

5b. Check all applicable regulated activities proposed to be conducted in the Monument:

☐ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
☐ Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands
☐ Anchoring a vessel
☐ Deserting a vessel aground, at anchor, or adrift
☐ Discharging or depositing any material or matter into the Monument
☒ Touching coral, living or dead

☐ Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument
☐ Attracting any living Monument resource
☐ Sustenance fishing (Federal waters only, outside of Special Preservation Areas, Ecological Reserves and Special Management Areas)
☐ Subsistence fishing (State waters only)
☒ Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

6 Purpose/Need/Scope ***State purpose of proposed activities:***

The Monument's ongoing efforts to inventory, document, and protect its maritime heritage sites have been instrumental in opening a window into the NWHI's seafaring past, and they have contributed materially to a growing body of knowledge about humans' historical interaction with the sea. Research and exploration is a critical maritime heritage activity that is called out in the Monument Management Plan. In addition to fulfilling mandates for inventory of maritime heritage resources, field research provides the body of knowledge that supports education and outreach efforts.

Over 60 shipwrecks have been recorded in the NWHI, some dating back to 1805. Many of these wrecks are important heritage resources, capturing the maritime history of the region. Furthermore, state and federal preservation legislation mandate the surveying of historic shipwreck sites and the production of submerged cultural resource management plans for historically significant material. Due to time constraints in the NWHI, surveys of any sites can only be partially completed during any single season. The work to be conducted in 2015 will continue upon investigation from previous years, explore for new historic resource sites, and collect long term monitoring data at shipwreck sites.

The proposed work is part of the long term archaeological survey for maritime heritage resources in the Papahanaumokuakea Marine National Monument. Federal preservation initiatives mandate the inventory, assessment and protection of cultural, archaeological, and historical resources within federally managed waters. 2015 proposed survey features non-invasive recording techniques for the discovery, identification and assessment of submerged heritage resources as part of this mandate.

The purpose of the 2015 survey is to better understand the existing maritime heritage resources in the Monument. Inventory and site assessment are critical parts of resource management and ocean stewardship. The Maritime Heritage Survey team plans to

continue non-invasive survey of selected maritime heritage resource sites initiated in previous field seasons in the NWHI and attempt to identify unknown sites, and survey for new shipwreck and sunken aircraft sites, as well as determine the feasibility for terrestrial survey for shipwreck survivor camps on Lisianski, Laysan and Kure Atoll. Additionally, the 2015 survey will continue efforts with multidisciplinary survey and monitoring of the shipwreck and sunken aircraft sites in the NWHI. The collection of video, and potential diagnostic artifacts assists with site identification, as well as research, education and management of heritage sites in PMNM.

7. Answer the Findings below by providing information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Monument:

The Findings are as follows:

a. How can the activity be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of the Monument?

The activity will be conducted with adequate safeguards for the resources and ecological integrity of the Monument. This project is part of a continuing effort to identify, interpret and protect maritime heritage resources in the Papahanaumokuakea Marine National Monument. Proposed work will be led by PMNM maritime heritage program staff, who have been involved in Northwetsern Hawaiian Islands maritime heritage research (archival as well as field) for over twelve years. Methodology and research continues to improve annually as the team's experience grows. Proposed heritage work in the NWHI emphasizes a low-impact approach, to an extent consistent with the Monument's conservation goals and objectives. Section 106 NHPA compliance will be submitted to the State Historic Preservation Office and OHA for review. NEPA permit is pending for this activity.

All maritime heritage scientists will participate in a cultural briefing prior to entering the Monument. The team will respect all resources both natural and cultural. The primary permittee will consult with OHA and the Native Hawaiian Coordinator at the PMNM on

cultural sensitivies, as well as the applicability of these activities to OHA and the Native Hawaiian Coordinator's efforts for the PMNM. No archaeological work will take place near any known native Hawaiian archaeological sites. If any native Hawaiian sites should be discovered, the proper experts will be notified and consulted immediately. Plans to collaborate with Native Hawaiian Program staff at PMNM will allow for further understanding and interpretation of the cultural significance of the Monument.

b. How will the activity be conducted in a manner compatible with the management direction of this proclamation, considering the extent to which the conduct of the activity may diminish or enhance Monument cultural, natural and historic resources, qualities, and ecological integrity, any indirect, secondary, or cumulative effects of the activity, and the duration of such effects?

The proposed project will have minimal impact on the resources of the region. The research consists primarily of non-invasive visual surveys. This research is being conducted in concert with the priorities listed in the Maritime Heritage Action Plan of the Monument's Management Plan (inventory and assessment, as well as education and outreach) and the Monument's Maritime Heritage Research, Education and Management Plan. The strategies proposed are designed to increase our understanding of maritime heritage resources and foster effective and protective management in the Monument. This project will also include multidisciplinary and partnership efforts towards increasing stewardship and enhancement of Monument goals and resources. Additionally, this project will facilitate the Monument's effort to "bring the place to the people, rather than the people to the place" through outreach and education efforts that will share PMNM resources with a broad audience.

c. Is there a practicable alternative to conducting the activity within the Monument? If not, explain why your activities must be conducted in the Monument.

There is no practicable alternative to conducting the activities in the Monument. Annual maritime heritage surveys are necessary to indentify, document and protect the maritime heritage resources in the Papahanaumokuakea Marine National Monument. Additionally, these surveys contribute to education and outreach efforts regarding maritime heritage resources in the PMNM. These activities directly relate to activities in

the Monument's management plan and the Monument's Maritime Heritage Research, Education and Management Plan.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?

The proposed activities have been identified as vital to the future management of the Monument and and will have no adverse impact on the resources, qualities and ecological integrity of the Monument. Additionally, the opportunity to conduct important education and outreach activities through the development of a short film, exhibits, web presence, presentations and articles will assist in Monument's efforts to promote stewardship and protection of resources, both natural and cultural. This project will serve to continue ongoing efforts to develop a multi-dimensional approach to understanding these maritime heritage sites in the NWHI. Work to develop a monitoring program based upon multidisciplinary parameters will help to better understand if there are impacts up on maritime heritage sites from climate change and other natural events.

Prior work by PMNM maritime archaeologists has demonstrated the broad, long term value of maritime heritage work in the NWHI. Annual expeditions have resulted in documentary films, magazine, journal and newspaper articles, graduate student research projects, television news coverage, award winning museum exhibits and websites conveying the research and findings to the public.

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.

A minimal amount of time will be spent at each location depending on weather and oceanographic conditions during research cruises.

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

Personnel included in this permit application have extensive experience conducting research in the Monument, and with all archaeological and ecological methods that will

be utilized. This is a continuance of a multi-year project. All methods are primarily non-invasive. PMNM Native Hawaiian staff, as well as OHA and cultural practitioners will be consulted in order to further avoid any potential impacts.

g. Provide information demonstrating that you have adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

This cruise and subsequent data analyses are supported by an allocation of 30 days at sea aboard the NOAA ship HIIALAKAI from NOAA's Office of Marine and Aviation Operations, a line item in the budget of NOAA's Papahanaumokuakea Marine National Monument, and an allocation of funds from NOAA's Coral Reef Conservation Program to NOAA Pacific Islands Fisheries Science Center.

h. Explain how your methods and procedures are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument cultural, natural and historic resources, qualities, and ecological integrity.

The research consists primarily of non-invasive surveys (both archaeological and ecological) and will always follow proper protocol (Conditions for the Custody and Care of Navy Historical Property, Annexed Rules of the UNESCO Convention on the Protection of Underwater Cultural Heritage) and undergo Section 106 and NEPA clearance. PMNM Native Hawaiian Program staff, OHA and cultural practitioners will be consulted in order to further avoid any potential impacts.

i. Has your vessel has been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?

The NOAA research vessel Hi'ialakai has been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of the Presidential Proclamation 8031.

j. Demonstrate that there are no other factors that would make the issuance of a permit for the activity inappropriate.

There are no other factors that would make the issuance of a permit for the activities inappropriate.

8. Procedures/Methods:

Methods:

Individual site assessment survey, remote sensing survey, towboarding and scooter survey, terrestrial survey of survivor camp areas, still photography and video are primary objectives, and monitoring and site/environmental data are secondary objectives, of the proposed 2015 maritime heritage project. Where possible, survey locations are prioritized, providing flexible alternatives in case of rough weather, other mission priorities, etc. The following methods will be employed for each of the five proposed 2015 objectives:

1) site assessment survey

Baseline trilateration and measured sketching will provide data for the initiation of the site map. Trilateration and the creation of a site map consists of sketching major features and measuring distances between artifacts in reference to a fixed temporary baseline, and is a time-consuming task. Divers deploy a temporary baseline, replicating previous surveys by attaching the baseline to fixed stainless steel datums. Survey tapes, slates with mylar "paper," and pencils and then used to triangulate the position of all artifacts in reference to the fixed reference line. In addition, digital photography are used to document feature and artifact details, as well as record the survey process itself. Artifacts and features are temporarily tagged with numbers and photographed in-place. Also, hand-held metal detectors are used to confirm/eliminate the presence of iron within sediments or substrate, and limited hand fanning of loose sediments and limited sediment probing is used to record details of artifacts and site boundaries. Typically, remote sensing survey methods are also employed in the vicinity when available to help determine site boundaries during individual site survey.

Equipment: Underwater slates
Transect tapes
Pencils
Folding rulers
Gear bags
Open-circuit scuba
Photo scales
Plastic artifact tags
Garmin GPS units and waterproof boxes
Site buoy

2) remote sensing survey

Exploration for new maritime heritage sites requires the use of remote sensing tools to cover large areas of the seafloor in the limited time allotted during research expeditions. This is an important component of the complete inventory of maritime heritage resources in PMNM. Remote sensing survey locates anomalies and potential maritime heritage resources for subsequent site assessments. The surface vessel tows a remote magnetometer at approximately 4 knots/hour on linear parallel tracks at or near the surface for shallow zones, recording variations in the localized magnetic field (gamma). The data is processed shipboard. This work will build upon magnetomter work conducted in 2010 and 2012. 2015 methodology for magnetometer work will not change from 2010 and 2012 work (reports from prior remote sensing survey work available upon request). Because magnetometer survey is dependent on partnerships and funding in 2015, a second alternative, diver tow boarding has been identified for the purposes of exploration of large survey areas. Though not technically "remote sensing" (divers in the water doing real-time visual survey), this method is sometimes used to supplement normal remote sensing. Diver survey is particularly helpful in shallow areas of extreme topographical variation. Any potential diver tow boarding operations during

2015 will be conducted only following established training provided by NOAA NMFS and along established NOAA NMFS tow boarding protocols for the NWHI. Diver will be towed at appoximately 3 knots/hour. A third alternative identified for 2015 work is survey utilizing dive scooters, which will allow the divers to be propelled at a pace faster than swimming with dive gear, and enable long surveys of reef areas of probably ship and aircraft losses. Any diving/snorkeling activities utilizing scooters will be conducted utilizing established NOAA NMFS scooter diving protocol, and scooters will go no faster than 1 knots/hour. Scooters will be the Bladefish 7000, borrowed from NOAA NMFS (photos attached). These scooters are low maintenance, lightweight, and low profile, causing no impact to the surrounding environment and posing no risk to divers.

Equipment: Marine Magnetics Explorer Mini Magnetometer
Tow boards
Laptop
HyPack survey software
Honda eu2000i generator or marine 12v batteries
Towboards
Bladefish 7000 scooters

3) Terrestrial survey for survivor camp sites

Terrestrial surveys on Kure, Lisianski and Laysan Islands in 2015 will explore the potential for future surveys on these islands for survival camps. Historical records and survivor accounts describe shipwreck survivor camps on these islands, and their discovery, or the discovery of associated artifacts could add an exciting dimension to the maritime heritage survey underwater. For example, the sailors from the shipwreck of the whaling ship Konohasset landed on Lisianski to set up a survivors camp and found the cookhouse and wreckage of another whaling ship, the Holder Borden. All survey will be conducted with minimal impact, during daylight hours and include taking photographs, sketching maps of potential survey areas and running test survey lines

with a metal detector in areas where survivor camps were located on maps. No invasive survey will take place in 2015, and all sensitive wildlife will be avoided. Survey will not take place near or around any protected species (monk seals, turtles, etc.). If there are monk seals hauled out nearby any potential survey areas, the survey will not take place. This will be a valuable opportunity to assess the feasibility of future terrestrial archaeological survey for potential survivor camps, and methodology will be developed that will avoid any impact upon the environment.

Equipment: Aquapulse handheld metal detector
Cameras
Slates and notebooks
Tape reels
Compasses

4) Monitoring sites

Monitoring sites employs a small subset of the same methods used for initial site survey. Slates, tapes, and (if necessary) temporary re-deployment of the baseline are used to confirm possible movement of features or artifacts. Digital photography is used to generate comparative data on the condition of features and changes to the natural environment (sediment level, etc.). Utilizing environmental parameters generated through Smith's 2009-2010 surveys of maritime heritage sites in the Hawaiian Islands, data will be collected about environmental changes in the sites over time. Additionally, work by NOAA CRCP staff in 2012 (Susie Holst) assisted with additional parameters for monitoring surveys in subsequent years. All surveys will be non-invasive and include collecting data along transect lines. Data will include fish surveys and benthic habitat assessments. All surveys will be non-invasive and will not include any collections or deployment of instruments.

Equipment: Underwater slates
Transect tapes
Pencils
Gear bags
Camera
Site buoy

NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding, as a customized application will be needed. For more information, contact the Monument office on the first page of this application.

9a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):

Common name:

Scientific name:

& size of specimens:

Collection location:

☐ Whole Organism ☐ Partial Organism

9b. What will be done with the specimens after the project has ended?

9c. Will the organisms be kept alive after collection? ☐ **Yes** ☐ **No**

• General site/location for collections:

• Is it an open or closed system? ☐ Open ☐ Closed

• Is there an outfall? ☐ Yes ☐ No

• Will these organisms be housed with other organisms? If so, what are the other organisms?

• Will organisms be released?

10. If applicable, how will the collected samples or specimens be transported out of the Monument?

11. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:

Currently, NOAA's Maritime Heritage Program is the only agency engaged in maritime heritage survey in the PMNM. 2015 project work includes collaboration with the National Park Service's Submerged Resources Center (NPS/SRC), East Carolina University, ONMS Northeast Region Staff, Flinders University in Australia, Woods Hole, and NOAA ONMS's Thunder Bay National Marine Sanctuary. In addition, work will be conducted in collaboration with the PMNM resource protection specialist.

12. List all specialized gear and materials to be used in this activity:

Equipment:
- Underwater slates
- Transect tapes
- Pencils
- Folding rulers
- Gear bags
- Open-circuit scuba
- Photo scales
- Plastic artifact tags
- Garmin GPS units and waterproof boxes
- Site buoy
- Marine Magnetics Explorer Mini Magnetometer
- Towboards
- Bladefish 7000 scooters
- Wire brush, wooden scraper,

Mesh bag and towels.

Aquapulse metal detector

13. List all Hazardous Materials you propose to take to and use within the Monument:
N/A

14. Describe any fixed installations and instrumentation proposed to be set in the Monument:

N/A

15. Provide a time line for sample analysis, data analysis, write-up and publication of information:

Initial results will be reported in the Cruise Report. Site reports resulting from this cruise will be finalized by June 2016. Data from this project will consist of site and artifact inventory development, site maps, digital still images and digital video products. A summary descriptive project report (activity report) including abstract, major accomplishments, participants, activity log, results of work to date, and proposed schedule of final report will be completed by December 31, 2015. A final report including heritage background, site descriptions, methodology, results, project evaluation and recommendations for maritime heritage resource management will be completed by July 2016. Data and report from this proposal will be sufficient to provide presentations at annual maritime history and maritime archaeology symposiums (for example Society for Historical Archaeology, Society for Hawaiian Archaeology, Symposium on the Maritime Archaeology and History of Hawai`i and the Pacific), and presentations will be made available upon request. Preservation-related data from the 2014 field season will also contribute to heritage preservation material on the Monument's Maritime Heritage Program web page (www.papahanaumokuakea.gov). .

16. List all Applicant's publications directly related to the proposed project:
Gleason, Kelly . A Sounding Lead on a Distant Reef: Captain Pollard's Lessons Learned. Historic Nantucket, In Press

Gleason, K. (2014), A Monumental Distance: Education and Outreach from the Most Remote Archipelago on Earth. In D.A. Scott-Ireton (ed.), Between the Devil and the Deep, When the Land Meets the Sea (pp141-153). New York, NY: Springer Science and Business Media.

Wagner D, Toonen RJ, Papastamatiou YP, Kosaki RK, Gleason KA, McFall GB, Boland RC, & Pyle RL (2013). Mesophotic surveys of the Northwestern Hawaiian Islands with new records of black coral species. Proceedings of the 2013 AAUS/ESDP Curaçao Joint International Scientific Diving Symposium: 341-345.

Kosaki RK, Wagner D, Leonard JC, Hauk, BB & Gleason KA (2013). First report of the table coral Acropora cytherea (Scleractinia: Acroporidae) from O'ahu Island (Main Hawaiian Islands). Bulletin of Marine Science 89(3): 745-746.

Papahānaumokuākea Marine National Monument. 2011. Maritime Heritage Research, Education, and Management Plan: Papahānaumokuākea Marine National Monument. Honolulu, Hawai'i. 97 pages.

Wagner D, Papastamatiou YP, Kosaki RK, Gleason KA, McFall GB, Boland RC, Pyle RL & Toonen RJ (2011). New records of commercially valuable black corals (Cnidaria: Antipatharia) from the Northwestern Hawaiian Islands at mesophotic depths. Pacific Science 65: 249-255.

Delgado, J.P. and K. Gleason. Lighting Strikes Twice. The Explorers Journal. 89:1, Spring 2011.

Raupp, Jason and Kelly Gleason. Submerged whaling heritage in Papahānaumokuākea Marine National Monument. Bulletin of the Australian Institute for Maritime Archaeology (2010), 34: 66-74.

Kelly Gleason and Jason Raupp. Lost and Found In Papahānaumokuākea Marine National Monument: The Possible Wreck Site of the Nantucket Whaleship Two Brothers. Historic Nantucket, (Volume 60, No. 3) Fall 2010.

Gleason, K. 2010. Activity Report: Maritime Heritage Resources Survey HA-010-03. Submitted to National Oceanic and Atmospheric Administration/ Papahānaumokuākea Marine National Monument.

Wagner, Daniel, Yannis P. Papastamatiou, Randall K. Kosaki, Kelly A. Gleason, Greg B. McFall, Raymond C. Boland, Richard L. Pyle and Robert J. Toonen. New records of commercially valuable black corals (Cnidaria: Antipatharia) from the Northwestern Hawaiian Islands. Pacific Science, in press.

Gleason, K. 2009. Activity Report: Maritime Heritage Resources Survey HA-08-04. Submitted to National Oceanic and Atmospheric Administration/ Papahānaumokuākea Marine National Monument.

Gleason, Kelly. NHC Supports Saginaw Search. Pull Together, Naval Historical Foundation. (Volume 47, No. 2). Fall/Winter 2008/2009.

Gleason, K. 2008. Activity Report: Maritime Heritage Resources Survey HA-08-04. Submitted to National Oceanic and Atmospheric Administration/ Papahānaumokuākea Marine National Monument.

Waddell, J.E. (ed). 2005. The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2005. NOAA Technical Memorandum NOS NCCOS 11. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team. Silver Spring, MD. .

With knowledge of the penalties for false or incomplete statements, as provided by 18 U.S.C. 1001, and for perjury, as provided by 18 U.S.C. 1621, I hereby certify to the best of my abilities under penalty of perjury of that the information I have provided on this application form is true and correct. I agree that the Co-Trustees may post this application in its entirety on the Internet. I understand that the Co-Trustees will consider deleting all information that I have identified as "confidential" prior to posting the application.

Signature 3/5/2015 Date

SEND ONE SIGNED APPLICATION VIA MAIL TO THE MONUMENT OFFICE BELOW:

Papahānaumokuākea Marine National Monument Permit Coordinator
6600 Kalaniana'ole Hwy. # 300
Honolulu, HI 96825
FAX: (808) 397-2662

DID YOU INCLUDE THESE?

- ☒ Applicant CV/Resume/Biography
- ☐ Intended field Principal Investigator CV/Resume/Biography
- ☒ Electronic and Hard Copy of Application with Signature
- ☒ Statement of information you wish to be kept confidential
- ☐ Material Safety Data Sheets for Hazardous Materials