

**Papahānaumokuākea Marine National Monument**  
RESEARCH 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](mailto: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:** Loren Scott Godwin

**Affiliation:** Papahānaumokuākea Marine National Monument

**Permit Category:** Research

**Proposed Activity Dates:** July 2 -July 22, 2012

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

**Proposed Locations:** Nihoa, Mokumanamana, French Frigate Shoals, Lisianski Island, Laysan Island, Pearl & Hermes, Kure, and Midway

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

8

**Estimated number of days in the Monument:** 21

**Description of proposed activities:** (complete these sentences):

a.) The proposed activity would...  
represent baseline efforts towards an updated species inventory and determination of abundance of alien marine invertebrate species associated with natural and man-made habitats within the Monument

b.) To accomplish this activity we would ....  
conduct faunal surveys by focused hand collections of mobile and sessile marine invertebrate fauna using SCUBA and snorkelling

c.) This activity would help the Monument by ...  
providing information to support the Monument Alien Species Action Plan, specifically Strategy AS-2 "Engage in active surveillance to monitor existing infestations and to detect new infestations of alien species over the life of the plan."

**Other information or background:**

## **Section A - Applicant Information**

### **1. Applicant**

Name (last, first, middle initial): Godwin, Loren Scott

Title: NOAA NMS Resource Protection Specialist

#### **1a. Intended field Principal Investigator (See instructions for more information):**

Loren Scott Godwin

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

Phone: [REDACTED]

Fax: [REDACTED]

Email: [REDACTED]

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

#### **3. Affiliation (institution/agency/organization directly related to the proposed project):**

Papahānaumokuākea Marine National Monument

#### **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):**

Dr. Megan Donohue, Field Researcher, Diver & Snorkeler

Nyssa Silbiger, Field Technician, Diver & Snorkeler

Holly Bolick, Field Technician, Diver & Snorkeler

Jason Leonard, Field Technician, Diver & Snorkeler

Carey Morishige, Field Technician, Snorkeler only

Hoku Johnson, Field Technician, Snorkeler only

Justin Rivera, Field Technician, Snorkeler only

Jasmine Cousins. Field Technician, Diver & Snorkeler



**Section B: Project Information**

**5a. Project location(s):**

|  |  |   |                                     |
|--|--|---|-------------------------------------|
| <input checked="" type="checkbox"/> Nihoa Island                 | <input type="checkbox"/> Land-based            | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> Necker Island (Mokumanamana) | <input type="checkbox"/> Land-based            | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> French Frigate Shoals        | <input type="checkbox"/> Land-based            | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> Gardner Pinnacles            | <input type="checkbox"/> Land-based            | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> Maro Reef                    |  |   |                                     |
| <input checked="" type="checkbox"/> Laysan Island                | <input type="checkbox"/> Land-based            | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> Lisianski Island, Neva Shoal | <input type="checkbox"/> Land-based            | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> Pearl and Hermes Atoll       | <input type="checkbox"/> Land-based            | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> Midway Atoll                 | <input checked="" type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> Kure Atoll                   | <input type="checkbox"/> Land-based            | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input type="checkbox"/> Other                                   |  |   |                                     |

**Ocean Based**

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

Location Description:

Man-made habitats and closely associated natural habitat at Midway Atoll, French Frigate Shoals and Kure Atoll. Opportunistic surveys of natural nearshore habitat at Nihoa, Mokumanamana, Laysan Island, Lisianski Island, Gardner Pinnacles, Maro Reef and Pearl and Hermes Atoll

Specific Locations:

Midway Atoll, Inner Harbor: 28.213985,-177.363124  
 Midway Atoll, Fuel Piers: 28.217615,-177.368445  
 Midway Atoll, East Island Pier: 28.210127,-177.335057  
 Midway Atoll, West Beach Old Sewage Pipe: 28.21059,-177.387251  
 French Frigate Shoals, Tern Island Pier: 23.867848,-166.288775  
 Kure Atoll, Pier: 28.393311,-178.296189  
 Lisianski Island: West channel: 26.065353,-173.971303  
 Pearl & Hermes Atoll lagoon: 27.834568,-175.832949

**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:***

Of the more than 400 species of marine alien species recorded in the Hawaiian Archipelago only 18 are established in the Papahānaumokuākea Marine National Monument (Monument). These marine alien species established in the Monument are made up of 1 macro-algae, 14 marine invertebrates and 3 fish. The established alien marine invertebrates are mostly found at Midway Atoll and French Frigate Shoals but can also be found at other islands within the Monument. Despite the fact that alien marine invertebrates have been recorded more often; less information concerning their abundance and distribution exists compared to alien algae and fish.

In order to control alien species, a hierarchical approach must address the problem at all stages of introduction from arrival to establishment and initiate management strategies ranging from prevention to eradication. Initial assessment and subsequent monitoring are essential in the control of marine aliens. Establishing such a monitoring effort in the Monument will require incremental efforts that will begin with new faunal surveys for marine alien species and the characterization of the abundance and distribution of established marine aliens.

The first faunal survey focusing on marine alien species in the Monument was conducted in 1996 at Midway Atoll (DeFelice, 1998). This survey only generated a species list and did not address the issues of abundance and distribution. In June 2010 an effort was begun by the Principal Investigator (Godwin) in partnership with Hawaii Institute of Marine Biology (HIMB) and Bishop Museum (BPBM) to conduct new faunal surveys under the auspices of the Alien Species Action Plan portion of the Monument Management Plan (MMP Sec 3.3.2, AS-2). This effort updated the 1996 effort for Midway Atoll and expanded surveys to French Frigate Shoals, Pearl and Hermes Reef, Lisianski Island, and Kure Atoll. The 2010 effort recorded 9 new marine invertebrate species records that were alien to the Monument and documented new distribution data for species already recorded as established.

Developing a monitoring scheme for marine alien species requires this inventory information and needs to be determined for established populations in the Monument. The effort being proposed here represents the initial stage of establishing a baseline for inventory, abundance and distribution of the established alien marine invertebrate species in the Monument.

**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?

Because of the close relationship between Native Hawaiians and the ocean, the marine life of the NWHI also constitute a living cultural resource whose well-being is integral to the perpetuation of cultural values and practices. The alien species surveyed by the methods outlined in this application are in close proximity to marine resources and habitats of great cultural significance to Native Hawaiians, in spiritual, religious, nutritional, utilitarian, and other ways. This activity is under the auspices of the sections of the MMP whose goals are to characterize and monitor the Monument's living marine resources but also provide information on resource protection. The information gained will directly inform traditional managers and Native Hawaiian practitioners of the distribution and abundance of these threats to native organisms within the Monument.

Before departure, all scientists participating in this cruise will receive a Native Hawaiian cultural briefing by a cultural practitioner approved by the Office of Hawaiian Affairs (OHA). In addition, the primary permittee, chief scientist, and other appropriate personnel will consult with OHA and the Monument's Native Hawaiian program coordinator on proper conduct while in the NWHI, on cultural sensitivities associated with the proposed activities and locations.

Field efforts will be conducted and supervised at all times by trained marine invertebrate specialists with background in the marine alien species of Hawaii and the tropical Pacific. Collections of voucher organisms will be focused on benthic sessile and mobile marine invertebrates associated with both man-made and natural substrates in shallow near-shore habitat. In the case of this study the shallow near-shore zone is defined as shoreline to 10 m depth. No collection activities will take place in the vicinity of historic resources or cultural sites. If these resources are inadvertently encountered, all activities will cease and moved to another location.

Activities based from the land at Midway Atoll or French Frigate Shoals will be under the supervision of US Fish and Wildlife (USFWS) staff based at these sites. These USFWS staff will provide information and expertise to limit impact to protected flora and fauna associated with Midway Atoll. In the event that land-based nearshore surveys take place at Kure Atoll, the State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife and Division of Aquatic Resources field staff will supervise activities.

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 Monument Management Plan (MMP) classifies alien species as a threat to Monument resources and defines a specific action plan (ASAP 3.3.2) directed at alien species. Within this action plan a specific strategy exists that states the importance of engaging in active surveillance for monitoring of existing infestations and to detect new infestations of alien species over the life of the MMP (Strategy AS 2). This process will lead to monitoring protocols, which are also a required management activity from the MMP (AS 2.3).

Although, the collections of organisms under this and the previous permit represent a biomass of less than 1 pound, it represents a positive cumulative effect. This is supported by the fact that new alien species have been recorded in these collections but also have been removed from both natural and man-made habitats in the Monument.

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.

This is an activity specifically for meeting requirements for the MMP involving alien species, therefore this activity must be within the Monument

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 goal of this project at this early stage is to provide baseline information that will produce an updated species inventory but also set the stage for long term monitoring. Additionally, the removal, preservation and identification of these organisms allows for the development of guides used to record and remove these organisms in the event that future mitigation efforts are undertaken.

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

The faunal inventory of proposed habitats is incremental and will require multiple efforts over coming years to attain accurate species lists, abundance and distribution data.

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

I have been conducting marine alien species surveys in the Hawaiian Archipelago since 2000. I am a qualified taxonomic generalist with expertise in crustaceans, polychaetes, echinoderms, tunicates, bryozoans and mollusks. I have peer reviewed taxonomic publications in various Hawaiian fauna and numerous technical reports from species inventories conducted in the Hawaiian Archipelago. This project will partner with colleagues from Bishop Museum, also with expertise in marine alien species, as well as experience in collection, preservation and archiving of marine specimens. This expertise allows for informed judgements on what organisms are collected and provides the ability to have more focused methodologies in the field that are tailored to marine alien species.

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.

The PI (Godwin) is full time staff at the Monument and co-investigators will be funded either by the PMNM-HIMB research partnership or budgetted contract funding (SOW:NCNM7300-11-02855).

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 training and experience of the investigators allows for specimen collection that is not haphazard. This focused collection will minimize the taking of unnecessary specimens and therefore lessen the impacts to other organisms.

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 project will operate from the NOAA R/V Hiialakai, which is outfitted with the appropriate VMS

j. Demonstrate that there are no other factors that would make the issuance of a permit for the activity inappropriate.  
This effort will be conducted by experts in the collection and preservation of marine invertebrate species and the taxonomy of tropical reef invertebrates associated with both man-made and natural habitats. Additionally, expertise exists on the team in the areas of quantitative analysis, monitoring design and spatial data technologies. The goal of this early stage is to generate baseline data on species inventories and habitat characterization that will lend itself to development of a monitoring scheme.

### **8. Procedures/Methods:**

The procedures below describe a process that will be incremental and repeated opportunistically in the next five years. The amount of time needed for faunal collections, taxonomy and quantifying the spatial extent of species and correlations with habitat types is extensive and will involve future permit submissions. This effort is a component of the overall alien species management program described in the MMP and therefore will be on-going.

#### **Marine Alien Invertebrate Faunal Survey**

This effort will require lethal sampling through hand collection of marine invertebrate fauna associated with man-made structures and near shore natural habitat combined with in situ surveys. Collections will be conducted on SCUBA or snorkelling and will be combined with in situ photographs. A target list of established species and will be used for reference while conducting in situ surveys at all requested locations and land-based shallow water surveys at Midway Atoll (See Appendix A). Collections of known established species will be conducted to create a reference collection at Bishop Museum. Additional collections will be for invertebrate faunal groups that have a greater likelihood of representing new marine alien species records (See Attachment). The determination for this second category is based on marine alien species commonly found in the main Hawaiian Islands and regularly associated with anthropogenic transport mechanisms (Godwin, 2003). The list for potential new records is not exhaustive and there are other species that could be found but the list provides a reference source for collections.

A maximum of 20 individuals for each unique taxon will be collected at each island. For sessile fauna, an individual will be represented by a section 5cmX5cm for encrusting growth forms and a 1cm piece for erect/branching growth forms. This is to include enough material for taxonomic and molecular analysis. This sessile fauna will not include corals and will generally be associated with man-made and natural rubble habitat. These samples of sessile fauna will be collected by the use of hand scrapers, which will be used to dislodge the organism from the substrate and minimize incidental collection of non-target organisms

Collections will be brought back to the research vessel or land-based laboratory on Midway Atoll and preserved with methods appropriate for both taxonomic identification and molecular analysis. An established and funded contract (NCNM7300-11-02855) will cover the collections being deposited at Bishop Museum upon return to Oahu for post-processing and storage.

In instances, there will be invertebrates that cannot be readily identified. Many species of invertebrates require microscopic or histological examination to confirm identification, so very limited numbers of voucher specimens will be collected as necessary to make positive identifications. A maximum of 10 individuals of any species identified as a marine alien species will be collected and preserved.

**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:  
See Attachment

Scientific name:  
See Attachment

# & size of specimens:  
20 individuals maximum/ island  
Non-coral sessile fauna: encrusting growth form- 5cmX5cm section, erect/branching growth form-1cm sample

Collection location:  
Man-made habitats and associated natural substrate and opportunistically on other natural substrate

Whole Organism  Partial Organism

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

All specimens will be preserved and archived at Bishop Museum. Portions of specimens needed for taxonomic analysis will be further processed at Bishop Museum. Portions preserved for molecular analysis will be held at Bishop Museum for use by Hawaii Institute of Marine Biology

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

• General site/location for collections:

Specimens from this effort will be stored in temperature controlled facilities at Bishop Museum, which are certified by the American Museum Association.

• Is it an open or closed system?  Open  Closed  
n/a

• Is there an outfall?  Yes  No  
n/a

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

• Will organisms be released?  
n/a

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

Specimens will be preserved and transported aboard the NOAA R/V Hiialakai. The collections will not include coral specimens

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

Samples for molecular analysis and taxonomic identification will be collected and stored at Bishop Museum under an existing contract (see Section 8). Hawaii Institute of Marine Biology. Specific collaboration on molecular analysis will be with Dr. Rob Toonen at Hawaii Institute of Marine Biology and the ReefChip project.

Collaboration with taxonomists at museums and universities around the world will be necessary for some organisms to attain greater taxonomic resolution. The following specialist would be consulted if additional identification assistance is needed:

Sponges - Barbara Calcinaï, Istituto di Scienze Del Mare, Università di Ancona, Italy

Hyrozoa - Dale Calder, Royal Ontario Museum, Canada

Polychaetes - Rolando Bastida Zavala, Universidad del Mar LABSIM, Mexico

Polychaetes - Leslie Harris, Natural History Museum of LA County, USA

Cnidarian (Anemones) - Daphe Fautin, U. of Kansas, USA

Bryozoans - Kevin Tilbrook, Queensland Museum, Australia

Bryozoans - Roger Cuffey, Penn State, USA

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

Only standard open-circuit SCUBA and hand tools will be used.

**12b. List all Hazardous Materials you propose to take to and use within the Monument:**

95% Ethanol, 10% Formalin

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

Not applicable

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

Samples will be accessioned at Bishop Museum and identified to the lowest taxonomic level by June 2013. Publications will follow in the Winter 2014.

**15. List all Applicants' publications directly related to the proposed project:**

Baums, I.B., S. Godwin, E. Franklin, R. Toonen and D. Carlon. 2011. Population expansions occurred during periods of Pleistocene sea level rise in four species of coral associated hermit crabs (Anomura: Diogenidae). *Molecular Ecology*

Godwin, L.S., L. Harris, A. Charette and R. Moffitt. 2008. The marine invertebrate species associated with the biofouling of derelict fishing gear in the Pāpāhānaumokuākea–Marine National Monument: A focus on marine non-native species transport. Preliminary report prepared for NOAA Pacific Islands Fisheries Science Center, Coral Reef Ecosystem Division. 26pp.

Martin J.W., S. Godwin, R. Moffitt. 2008. Additions to the decapod crustacean fauna of the Hawaiian Islands, I. A review of the crab genus *Sakaila* Manning & Holthuis, 1981 (Decapoda, Brachyura, Calappoidea) with a description of a new species from French Frigate Shoals, Northwestern Hawaiian Islands. *Zootaxa*

Godwin, L.S. 2008. The hermit crab *Calcinus isabellae*, Poupin, 1997 (Crustacea: Decapoda: Anomura: Diogenidae), a new record for the Hawaiian Archipelago, including a review of the genus *Calcinus* Dana, 1851 in Hawai'i. *Bishop Museum Occasional Papers* 100: 52-54

Castro, P & L.S. Godwin. 2006. First record of coral crabs of the family Tetraliidae (Crustacea: Brachyura) from the Hawaiian Islands. *Bishop Museum Occasional Papers*. 88:53-55

Godwin, L.S. & H. Bolick. 2006. Inventory of intertidal and shallow sub-tidal marine invertebrates at Kalaupapa National Historic Park. Contribution No. 2006-003 to the Hawaii Biological Survey. 58 pp.

Godwin, L.S., K.S. Rodgers & P.L. Jokiel. 2006. Reducing potential impacts of invasive marine species in the Northwestern Hawaiian Islands Marine National Monument. A report for research conducted under DOI, NOAA, National Ocean Service MOA 2005-008/6882 Amendment No. 001, "Research in Support of the NWHI Coral Reef Ecosystem Reserve, HIMB, SOEST, UH Mānoa."

Godwin, L.S. 2003. Hull fouling of maritime vessels as a pathway for marine species invasions to the Hawaiian Islands. *Biofouling* 19 (Supplement): 123-131

Zabin, C.J., J.T. Carlton and L.S. Godwin. 2004. First report of the Asian sea anemone *Diadumene lineata* from the Hawaiian Islands. *Bishop Museum Occasional Papers* 79: 54-58

Godwin, L.S., L.G. Eldredge and K. Gaut. 2004. The Assessment of Hull Fouling as a Mechanism for the Introduction and Dispersal of Marine Alien Species in the Main Hawaiian Island. Final report submitted to the Hawaii Coral Reef Initiative Research Program. Bishop Museum Technical Report 28. Contribution 2004-015 to the Hawaii Biological Survey

Godwin, L.S. & N. L. Evenhuis. Marine Molluscs. In: Evenhuis & Eldredge (eds). *Natural History of Nihoa and Necker Islands* pp. 147-155. Bishop Museum Press 2004. 220 pp.

Godwin L.S. & L. G. Eldredge. Marine Invertebrates. In: Evenhuis & Eldredge (eds). *Natural History of Nihoa and Necker Islands* pp. 156-177. Bishop Museum Press 2004. 220 pp.

Godwin, S. 2005. Preliminary species inventory for marine invertebrates associated with the coral reef communities of the Northwestern Hawaiian Islands. Report submitted to the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve.

Friedlander, A.M., G. Aeby, R. Brainard, A. Clark, E. DeMartini, S. Godwin, J. Kenyon, R. Kosaki, J. Maragos, and P. Vroom. 2005. The State of Coral Reef Ecosystems in the Northwestern Hawaiian Islands. pp. 270-311. In J. Waddell (ed.), *The State of Coral Reef Ecosystems of the United States and the 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. 522pp.

DeFelice, R.C., D. Minton, and L.S. Godwin. 2002. Records of shallow-water marine invertebrates from French Frigate Shoals, Northwestern Hawaiian Islands, with a note on nonindigenous species. Report to the U.S. Fish and Wildlife Service. Bishop Museum Technical Report No. 23. Contribution No. 2002-01 to the Hawaii Biological Survey

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.

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Signature

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