

Papahānaumokuākea Marine National Monument
EDUCATION 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. Andrew Rossiter: Director, Waikiki Aquarium

Affiliation: Waikiki Aquarium, and Department of Zoology, University of Hawaii at Manoa

Permit Category: Education

Proposed Activity Dates: June 1, 2010 - December 31, 2010

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

Proposed Locations: Nihoa Island, Mokumanamana, French Frigate Shoals, Gardner Pinnacles, Maro Reef, Laysan Island, Lisianski Island, Neva Shoal, Pearl and Hermes Atoll, Midway Atoll, and Kure Atoll

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

(10) ten, but most likely no more than (8) eight on any one trip

Estimated number of days in the Monument:

Estimated maximum of (3) three separate trips covering approximately (30) thirty days each, for a total of 90 days

Description of proposed activities: (complete these sentences):

a.) The proposed activity would...
involve the collection and removal of a limited number of target live fishes and corals from the Papahānaumokuākea Marine National Monument. These specimens will be collected with extreme care by trained and highly experienced professional biologists. Accidental by-catch and incidental mortalities will be avoided by targeting select specimens, and extreme care will be taken to not damage the habitat. It is the goal of the Waikiki Aquarium staff or other designees to collect specimens and return them alive and in good condition to the Waikiki Aquarium, where they will be maintained and put on public display in a new exhibit highlighting the fauna and ecosystem of the Papahānaumokuākea Marine National Monument.

b.) To accomplish this activity we would
use SCUBA and snorkeling techniques within the Papahānaumokuākea Marine National Monument, specifically around the islands of Midway Atoll, French Frigate Shoals, Maro Reef,

and Pearl and Hermes Atoll, but also including other islands/reefs within the Monument. A small boat or vessel may be used to reach those few collecting sites where shore access is not possible.

The target organisms will be collected by trained and experienced biologists using non-destructive and non-lethal collecting methods, namely handnets, barrier nets, geological picks, small hand tools, fishkeeps and other small collection containers. Specimens will be targeted individually to avoid the accidental capture or incidental mortality of unwanted specimens that can occur during non-targeted netting activities.

For fishes, to minimize post capture trauma, emphasis will be placed on collecting smaller, juvenile specimens so as to avoid the stress-related issues that sometimes occur with larger specimens during transportation and introduction to captivity. Additionally, this protocol aims to, whenever possible, avoid the removal of larger, reproductively mature animals from the population.

For corals, priority will be given to collecting fragments which have become detached naturally from parent colonies. Fragmentation of intact colonies will be undertaken as a last resort only when naturally occurring fragments are not plentiful or available, and will be done with utmost care so as to minimize impact to the parent colony. Waikiki Aquarium biologists and their designees are highly experienced and extremely competent in this procedure and any deleterious effects from sampling will be minimal and short lived. For example, in the 2009 sampling for this project, the small scars left when fragments were removed from a parent colony had completely healed over three weeks later.

c.) This activity would help the Monument by ... presenting to our 320,000 visitors annually, a living reef habitat representative of that found in the Monument. Viewing this ecologically accurate exhibit and associated graphic and video educational messaging will result in increased public awareness of the Monument. Furthermore, it will also give rise to an improved understanding of the unique nature of the marine faunas found there, and why it is so important to preserve and protect them. Additionally, our education programs, which reach over 32,000 schoolchildren annually, will be revised to incorporate accurate scientific and cultural information about the Monument, using the exhibit as a dynamic living tool to underline the education and conservation message.

Other information or background:

The Waikiki Aquarium has a long and successful history in maintaining, breeding, and propagating both local and non-local species of marine fishes and invertebrates. This includes uncommon and previously described "hard to keep" species, endangered species, and Species of Concern. The Aquarium is internationally renowned for its pioneering and successful programs in this area and holds many records for 'firsts' in public exhibiting or breeding of species, any many records for longevity in captivity. For example, it was the first aquarium within the United States, and second worldwide, to successfully breed the Chambered Nautilus, and continues to breed these animals to this day. One of the signature fish species which we have applied to

collect under this permit, the Masked Angelfish *Genicanthus personatus*, has only been bred in captivity at the Waikiki Aquarium. The Aquarium's Coral Ark program seeks to maintain at the Aquarium rare corals from around the Main Hawaiian Islands, as a precautionary measure should these corals disappear from their natural environment. Currently, rare species such as the irregular rice coral *Montipora dilatata*, one of four federally recognised Species of Concern in Hawaii (Kaneohe Bay, Oahu) and *Acropora cytherea* (Kauai) are currently being successfully grown and propagated as part of this program. Our last trip to French Frigate Shoals last season even resulted in the collection and current successful maintenance of one undescribed *Acropora* species according to personal communications with USFWS Coral Reef Biologist, Dr. James Maragos. Many other examples of the Aquarium's achievements exist, and the Aquarium continues to be at the forefront in maintaining successfully, exhibiting or breeding newly discovered, rare, and challenging species.

Section A - Applicant Information

1. Applicant

Name (last, first, middle initial): Rossiter-Ph.D, Andrew

Title: Director, Waikiki Aquarium

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

Richard L. Klobuchar, Jr.

University of Hawaii (Manoa)/Waikiki Aquarium

Aquarium Biologist/Research Support/Scientific Diver

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

[REDACTED]

Phone:

[REDACTED]

Fax:

[REDACTED]

Email:

[REDACTED]

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

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

University of Hawaii (Manoa)/Waikiki Aquarium

Bishop Museum

USFWS

NOAA

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, Teacher; Jane Doe, Videographer):

Norton Chan-Aquarium Biologist II/Scientific Diver, UH Manoa, Waikiki Aquarium;
Additional Waikiki Aquarium Biologist(s)/Scientific Diver(s) (TBD); James Maragos,
Ph.D.-Coral Reef Biologist, USFWS; Richard Pyle, Ph.D.-Research Technician,
Associate Zoologist, Database Coordinator, Bishop Museum; Additional NOAA team
member(s) (TBD); Additional Collection Divers (TBD)

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 checked="" 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:

Waikiki Aquarium, Bishop Museum, USFWS, and NOAA staff and their designees will conduct SCUBA/snorkeling activities in various marine habitats from intertidal to <50 meters depth around the various project locations. Collaborative collecting efforts with additional Bishop Museum, FWS, and NOAA staff may be necessary around the islands of the Monument to obtain certain specimens which were not found by Waikiki Aquarium staff.

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 Papahānaumokuākea Marine National Monument is the largest single area dedicated to conservation in the United States and is home to more than 7,000 marine species, a quarter of which are found nowhere else on Earth. The region holds the largest, healthiest, and most pristine coral reef system in the United States.

Its geographic remoteness and restrictions on public access mean that most people in their lifetime will not be able to visit the Papahānaumokuākea National Monument, and so will be unable to gain an appreciation for our country's largest Marine National Monument. Through its new 5,000 gallon public display, the Waikiki Aquarium seeks to introduce the Monument to the public and stimulate an interest and appreciation for its significance and importance. Additionally, graphic and video formats will provide educational and conservational messaging dedicated to the Monument ecosystem.

To create an exhibit that represents the Monument accurately and distinguishes it clearly from existing Aquarium exhibits that represent other Hawaiian ecosystems, certain signature species of fishes and invertebrates will need to be collected and transported back to the Waikiki Aquarium for public display and propagation. These signature species are highly abundant around the NWHI, but are extremely rare or totally absent around the Main Hawaiian Islands. As such, removal of a few specimens of these species from the Main Hawaiian Islands may mean extirpation from that habitat. In contrast, the collection of a limited number of specimens of these target species from the NWHI where they are abundant would be insignificant. It is on this reasoning that our request to collect from the NWHI is based.

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?

This activity will be conducted in a manner that does not impinge upon the cultural, natural and historical resources and ecological integrity of the Monument. Ultimately, this project will result in an increased attention and appreciation toward the cultural and natural resources and ecological integrity of the Monument. The living organisms collected during this activity will be displayed at the Waikiki Aquarium in the largest NWHI exhibit in the world. In addition to experiencing a living visual underwater image of the Monument through this exhibit, guests will be presented with educational graphics and video presentations that discuss the resources and importance of the Monument.

The activities of the Aquarium are centered around education, conservation and research, and it is our goal to promote the cultural and natural resources and ecological aspects of the NWHI, and not detract from them. Of particular relevance in regard is our sampling time frame and ecologically sensitive protocols. Sampling will last no longer than is necessary to collect the desired species. Non-lethal and non-destructive capture methods will be used to ensure that only the targeted organisms are collected, and that these are treated with the greatest care possible. Care will be taken to ensure that the environment they are removed from is not harmed in the process. Shore-based dives and snorkeling will be used preferentially whenever possible, to prevent any additional disturbance that may be caused by a small boat/vessel and to reduce the amount of additional resources that would be used. Only specimens which are easily replaced or can regrow in a minimal amount of time will be collected. Wherever possible, juvenile fishes will be collected, thereby avoiding the removal of larger, sexually mature specimens which help repopulate the reefs. Collected coral fragments will preferentially consist of naturally detached fragments; only if these are unavailable will small fragments be removed directly from parent colonies. Should fragment removal be necessary, it will be done in a manner that will not affect the long-term growth or wellbeing of the coral: Waikiki Aquarium biologists are highly experienced and very successful in this technique. If coral fragments are taken directly from parent colonies,

to minimize collection pressure on any single colony, several different colonies will be sampled. No activities will be performed in the vicinity of known shipwrecks or other cultural resources. If and such resources are discovered during the course of our activities, their location(s) will be noted and reported back to the Monument. Collection activities will cease immediately, and will be moved to another location.

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? Only the minimum number of target organisms (i.e. fishes and corals) necessary to achieve our goals will be removed, and no other organisms will be damaged or collected. Together with the careful, precise and ecologically-sensitive collection methods used by the experienced biologists involved, these actions will ensure that any short term impact of removal will be minimal, and that long term impact will be undetectable. For example, in the 2009 sampling for this project, the small scars left when fragments were removed from a parent colony had completely healed over three weeks later. The protocols used in this project should ensure that there are no short term or long term effects on the cultural historic resources of the Monument, which will remain intact and essentially unchanged.

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.

As noted in the Proclamation, the Monument is home to thousands of species, many of which are found nowhere else on Earth. Every effort will be made to collect the majority of the specimens needed from the local waters of the Main Hawaiian Islands, but it simply is not possible to collect all the specimens we will need around these islands. In addition to this, the stress placed on fish populations and ecosystems of the NWHI, where these fish are relatively common, would be insignificant or undetectable. This is in stark contrast to the high stress that collection would place on fish populations in the Main Hawaiian Islands, where these animals are relatively rare and whose continued survival there is uncertain. As such, the probability of a rapid and successful population

replenishment following removal of a small number of specimens is almost assured in the waters of the Monument, but highly uncertain in the waters of the Main Hawaiian Islands.

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 minimal and brief effect this activity might have pales in comparison to the benefits it brings to the Monument. The Waikiki Aquarium is world renowned for its ability to recreate ecologically accurate and realistic exhibits of marine habitats. For visitors, being able to actually "see" a part of the Monument through the NWHI exhibit would do much more to interest and educate them than any book or video. Having live animals that most people will never get to see in their lifetimes in their natural environment, separated from them by only a thin sheet of acrylic, is guaranteed to grab the viewer's attention and stimulate their interest. By viewing the exhibit and the associated graphic and video education presentations, the public will develop an appreciation of the importance of the Papahānaumokuākea Marine National Monument and the need to preserve it for future generations. Lastly, interactive touchscreens associated with the exhibit will enhance this appreciation by providing information on the cultural importance of the islands, their natural resources and their ecology, and provide visitors an insight into the significance of our country's largest Marine National Monument.

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

We are proposing from one to three trips to the Monument during this period of time to complete this project. Each trip would last approximately one to four weeks. The timing of each trip may be dependent on the availability of flights to and from Midway Atoll and the timing of the Hi'iialakai NOAA vessel (or other support vessels) being in close proximity. For SCUBA operations based out of Midway Atoll, dives would likely take place over a 3-4 day period during that time in which the support vessel is in close proximity, with snorkeling excursions being performed as needed. GPS locations will be used to pinpoint areas previously surveyed and known to be home to the target fish and/or coral species. This information will help reduce the amount of exploratory diving

and sailing that would ordinarily need to be done, thereby maximizing the efficiency of the collection process and reducing the duration of the time needed within the Monument.

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

The Waikiki Aquarium has been involved in many fish and coral collection activities over several decades, often as the lead organization. It is internationally renowned for its expertise and successes in collecting, maintaining, exhibiting, breeding and propagating many rare, new, and sometimes protected or endangered organisms. Education, research and conservation are the three activities underpinning the Aquarium's mission, and wherever we collect specimens, extreme care is taken to ensure that minimal, if any, environmental impact results from our collecting activities. This standard operating protocol is especially relevant in the pristine NWHI ecosystem.

Coral propagation is the forte of the Waikiki Aquarium, which has successfully maintained live corals since 1978. It now houses the largest and oldest collection of corals in the United States and is internationally renowned as a leader in this field. The objective of the Aquarium's Coral Farm program is to propagate corals to provide specimens to researchers and other public aquariums worldwide. Each year this program distributes approximately 1,000 fragments of coral. In this manner these organizations will not have to source corals from living reefs, thereby reducing collection pressures.

The Aquarium's newly established Coral Ark program seeks to propagate rare Hawaiian corals, with the ultimate objective of conserving them in captivity until they can be reintroduced into the wild. It is planned to expand this program to include all threatened or endangered Hawaiian corals, and also other rare Pacific corals. Notable species housed here currently include the rare endemic rice coral *Montipora dilatata*, collected in 2000 as fragments from the three known remaining colonies in Kaneohe Bay, and

fragments of *Acropora cytherea*, which were collected in 2007 off Kauai from the only known colony of this coral there. For both these species, propagation efforts on the fragments originally collected have been extremely successful: the original pieces have grown to the extent that they themselves have been subdivided into new fragments for propagation. The 20 live coral pieces received from the NWHI in October are also becoming established and are growing well. Lastly, it should be noted that corals in both these programs also represent a genetic depository that researchers can use, without affecting naturally occurring corals on reefs.

To this day, we maintain a prized collection of very rare Hawaiian marine organisms including, but not limited to: Hawaiian Monk Seals; the only known specimens of the Masked Angelfish *Genicanthus personatus* in public aquaria within the United States (we also have the only the only known record of breeding this species); several species of *Leptoseria*, the deepest known photosynthetic corals; and an extensive list of rare fishes and invertebrates which are not exhibited anywhere else.

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 Waikiki Aquarium has several sources of finance to draw upon to adequately fund this activity; financial support from NOAA, NMFS, Friends of the Waikiki Aquarium (FOWA) will support this activity.

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 Waikiki Aquarium has had years of experience working with and employing biologists who are extremely skilled in collecting a variety of organisms. This wealth of experience and expertise enables them to use non-lethal and non-destructive fishing practices which ensure that the animals collected are treated with the greatest care possible and that the environment they are removed from is not harmed in the process.

Whenever possible, shore-based dives/snorkeling will be used to prevent any additional disturbance that may be caused by a small boat/vessel. When shore-based dives and snorkeling are not an option, a small boat/vessel may be used. The impact on the natural resources of the Monument will be minimized by selecting specimens which are easily replenished or can regrow with a minimal amount of time and/or energy. Juvenile fishes will be collected when possible, thus preventing the taking of larger, sexually mature specimens, whose reproductive efforts serve to replenish populations.

Whenever possible, collected coral fragments will consist of naturally detached fragments. When naturally occurring fragments are not available, small fragments may be removed directly from parent colonies, and if/when this is done, it will be in a manner that will not affect the long-term growth of the coral. The success of this approach can be evaluated from the observation that the small scars left when fragments were removed from a parent colony as part of the 2009 project had completely healed over three weeks later. If coral fragments are taken directly from parent colonies, several different colonies may be used to prevent any one coral from becoming too stressed. Waikiki Aquarium biologists are highly experienced and competent in this technique. The minimum number of organisms needed will be removed through this activity, and those that are removed will be selectively chosen, thereby avoiding the unnecessary physical damage and death that often occurs to specimens that are captured incidentally as bycatch. While a small number of natural resources (i.e. fishes and corals) will be removed from the Monument, the effect will be short term only; the lasting effect of their removal will be invisible and the cultural, natural and historic resources, and ecological integrity of the Monument will remain intact.

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

NOAA vessels are equipped with the NOAA OLE Monitoring System

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 activity inappropriate.

8. Procedures/Methods:

Midway Atoll Collection Sites: Waikiki Aquarium/NOAA staff

Collection sites will be reached via SCUBA-assisted or snorkel-assisted shore dives or by use of small boat/vessel. Extreme care will be taken to ensure ecologically or culturally sensitive areas are not disturbed during our activities. To minimize the amount of exploratory diving within the Monument, previously visited dive/collection sites will be utilized. GPS locations have been previously recorded in areas known to contain certain desired specimens and will be used to locate some of these sites.

Non-destructive and non-lethal collection techniques with which Waikiki Aquarium staff are very well acquainted with will be used. Collecting tools including hand-nets, barrier nets, geological picks, small hand tools such as chisels and wire cutters, fish keeps, various small collecting containers, and mesh collection bags will be used for the collection of fish and corals. Fish may be placed in various keeps and will be gradually raised through the water column. Procedures with which Aquarium staff, Bishop Museum, and NOAA staff are experienced in will be used to acclimate fish from deeper locations to more shallow depths to prevent the onset of barotrauma. Fish may be fasted as they are collected in keeps or specialized containers suspended in the harbor at Midway Atoll or from an offshore float. This temporary fasting will facilitate the desired conditions for shipping and lessen the likelihood of water fouling in the bags during transit. If possible, fish and/or corals may be shipped via aircraft back to Honolulu. Fish will be packaged in individual bags about 1/3 full of seawater; several fragments of coral may be packaged together or individually based on fragment/colony size. Once placed in bags, all excess air will be removed from the bag and oxygen will be pumped into the bag until full. All fish will be double bagged and banded to prevent accidental puncture or collapse of the bag. Bags will then be placed into styrofoam boxes with plastic liners, and heat packs will be secured to the inside lids of the boxes

(if necessary) to maintain proper temperatures within the boxes. The styrofoam boxes will be placed within cardboard boxes, sealed, and be ready for transit.

If shipping via aircraft is possible, coral fragments collected from Midway Atoll will be placed either in keeps nearshore or in areas of reduced turbulence where they can be easily gathered for packaging and transit. The number of coral fragments per bag will depend on the size and quantity of the fragments. Plastic strips will be wrapped around the corals to provide cushioning from the vibrations of transit and to prevent individual fragments from contacting each other. In addition, plastic strips will line the insides of each bag to further prevent damage to individual fragments and also to prevent puncturing of the bags. Corals will be bagged according to genus/species, with different corals being packaged separately. Sufficient seawater will be placed in each bag to cover the corals, then the excess air will be removed and the bag refilled with oxygen until full. All corals will be double bagged and banded to prevent puncture or collapse of the bag. All bagged corals will be placed into styrofoam boxes with plastic liners, and heat packs will be secured to the inside lids of the boxes (if necessary) to maintain proper temperatures within the boxes. The styrofoam boxes will be placed within cardboard boxes, sealed, and be ready for transit.

Other islands/collection sites outside of the Midway Atoll waters: Various Collectors (TBD)

Collection divers from various agencies (including but not limited to FWS, NOAA, Bishop Museum) may be used to collect various fish/corals not found within the marine habitats surrounding Midway Atoll when Waikiki Aquarium staff are not present. Target species of coral include those which are rare or absent from the Main Hawaiian Islands, or those which cannot be visually identified and/or may represent new geographic records or new species. The priority should remain on collecting small (5-15 cm) naturally dislodged coral fragments of these corals. If fragments are to be taken

directly from parent colonies, these fragments should be removed in a manner which is least invasive and minimizes the long term affect on the coral's growth. Only corals exhibiting excellent health characteristics will be collected. Coral which appears to be unhealthy or diseased will not be collected. Coral fragments can be brought to the water surface via collection bags or specialized keeps where they will then be maintained aboard the Hi'ialakai or other support vessels (TBD). Coral fragments will be placed into specialized holding tanks or coolers aboard the vessel. Extreme care will be taken to follow the protocols established by the Monument concerning the discharge of water from these holding tanks/coolers. When possible, the total volume of water within these holding tanks/coolers should be exchanged a minimum of 2-4 times per day while within the Monument. Discharge water will drain into the ballast tanks (or other marine sanitation device) of the vessel during this time. Once outside the SPA's, an open, flow-through type circulation would be preferred (if possible). If Waikiki Aquarium staff or their designee(s), are present at Midway Atoll around the same time that the Hi'ialakai will be in the vicinity, it would be ideal for them to receive any fish/corals collected at the beginning of the trip which were being maintained aboard the vessel so these could be shipped via air transit back to the Waikiki Aquarium. These fish/corals would be prepared for shipping as described above. This would allow for room for additional fish/corals to be collected on the return trip (if needed) and these specimens could be transported via ship under the protocols of water exchanges described above.

Fish/corals will not be disposed of once collected and placed into holding aboard the vessel(s). Any fish/corals that become diseased during transit, or which die, will be retained and properly quarantined/preserved as stated by guidelines set forth by the Monument. The Waikiki Aquarium staff is continuing to work with Monument officials to ensure all fish and coral collection/transportation guidelines are met and followed.

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):

See attached "species collection list"

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?

The intent of this project is to bring the specimens collected back to the Waikiki Aquarium, University of Hawaii at Manoa, where they will be placed in dedicated quarantine systems and eventually on display. Once through the quarantine process and treated successfully for any diseases or ailments they might have, they will be placed in the new 5,000 gallon NWHI educational display, and other associated propagation systems at the Aquarium.

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

• Specific site/location:

Gallery 4-1/ Northwestern Hawaiian Islands Exhibit-Waikiki Aquarium

• Is it an open or closed system? Open Closed

• Is there an outfall? Yes No

The outfall disposes of system water only during periodic scheduled water exchanges or flushing procedures. This discharge water enters a sanitary sewer line and does not flow untreated to the ocean.

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

Yes; See attached "exhibit species list"

• Will organisms be released?

No

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

Fish and corals will be carefully boxed then transported by plane out of Midway Atoll when possible. In addition to these fish and corals, some specimens may be transported via vessel (ie. Hi'ialakai) back to Honolulu. (see 8.Procedures/Methods for further details)

11. Is your proposed activity based on a State Department of Education Standards Based Curriculum? If so, describe:

N/A

12. If applicable, describe how you are collaborating with others in any way to reduce duplicative activities in the Monument or elsewhere?

In addition to the organisms being collected for display at the Waikiki Aquarium, we will be working closely with NOAA staff in a collaborative effort to collect organisms also for an educational display in the NOAA Mokupapapa Discovery Center in Hilo, HI. Waikiki Aquarium staff/designees and NOAA staff will partner up to assist each other in their collecting efforts; this will avoid replication and unnecessary additional disturbance at the collecting sites.

13. What materials, products or deliverables will be developed as a result of your proposed activity? Provide a time line for write-up and publication of information or production of educational materials:

The Waikiki Aquarium is world renowned for its ability to recreate ecologically accurate and realistic exhibits of marine habitats. For its 320,000 annual visitors, the experience of "seeing" a part of the Monument through the NWHI exhibit would do much more to interest and educate them than any book or video. Having live animals that most people will never get to see in their lifetimes in their naturalistic environment, separated from them by only a thin sheet of acrylic, is guaranteed to grab guests' attention and stimulate their interest. This ecologically accurate exhibit and associated graphic and video educational messaging will result in increased public awareness of the Monument, and the public will develop an appreciation of the importance of the Papahānaumokuākea Marine National Monument and the need to preserve it for future generations. Additionally, our education programs, which reach over 32,000 schoolchildren annually, will be revised to incorporate accurate scientific and cultural information about the Monument, using the exhibit as a dynamic living tool to underline the education and conservation message. Lastly, interactive touchscreens associated with the exhibit will enhance this appreciation by providing information on the cultural importance of the islands, their natural resources and their ecology, and provide visitors an insight into the significance our country's largest Marine National Monument. The proposed opening of this exhibit is early 2011.

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

Collecting gear would include, but not be exclusive to, SCUBA gear, monofilament handnets, monofilament barrier fence nets, mesh bags, hypodermic needles used for prevention of barotrauma in collected fish, various sized holding containers for fishes and coral, geological picks, and various hand held tools. Holding tanks may consist of collapsible "kiddie" pools modified to our uses, coolers, various water pumps and air pumps that may be portable or "fixed". Other specialized gear would be shipping materials to transport the organisms. These would be plastic bags of various sizes, insulated boxes consisting of styrofoam and cardboard, rubberbands, packing tape, and oxygen bottle(s).

15. List all Hazardous Materials you propose to take to and use within the Monument:

N/A

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

N/A

17. List all Applicants' publications/references directly related to the proposed project:

Press release: http://papahanaumokuakea.gov/PDFs/nr_coral_arrival_final.pdf

Television newscast/web article: <http://www.hawaiinewsnow.com/Global/story.asp?S=11401255>

Magazine article: <http://www.honolulumagazine.com/Honolulu-Magazine/January-2010/The-Waikiki-Aquarium-039s-Coral-Collection/>

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

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

Species Collection List

9a. Collection of specimens:

- **“Whole Organism” (in reference to corals) denotes coral specimen which has become naturally detached from parent colony**
- **“Partial Organism” (in reference to corals) denotes coral specimen which is fragmented from parent colony**

Common name: Table Coral

Scientific name: *Acropora cytherea*

& size of specimens: 10: 5-15cm

Collection location: various marine habitat from intertidal to <50m

X **Whole Organism** X **Partial Organism**

Common name: Fuzzy Table Coral

Scientific name: *Acropora paniculata*

& size of specimens: 10: 5-15cm

Collection location: various marine habitat from intertidal to <50m

X **Whole Organism** X **Partial Organism**

Common name: Finger Staghorn Coral

Scientific name: *Acropora humilis*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

X **Whole Organism** X **Partial Organism**

Common name: Bushy Staghorn Coral

Scientific name: *Acropora valida*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

X **Whole Organism** X **Partial Organism**

Common name: Branching Staghorn Coral

Scientific name: *Acropora nasuta*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

X **Whole Organism** X **Partial Organism**

Common name: Lumpy Rice Coral

Scientific name: *Montipora turgescens*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

X **Whole Organism** X **Partial Organism**

Common name: Hawaiian Rice Coral

Scientific name: *Montipora dilatata*

& size of specimens: 10: 5-10cm

Collection location: various marine habitat from intertidal to <50m

X **Whole Organism** X **Partial Organism**

Common name: Unknown coral species

Scientific name:

& size of specimens: Maximum of 5 voucher specimens of each individual coral that cannot be visually identified and/or may represent new geographic records or new species: various sizes ranging up to 15cm

Collection location: various marine habitat from intertidal to <50m

X **Whole Organism** X **Partial Organism**

Common name: Masked Angelfish
Scientific name: *Genicanthus personatus*
& size of specimens: 9: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X **Whole Organism** ___ **Partial Organism**

Common name: Japanese Angelfish
Scientific name: *Centropyge interrupta*
& size of specimens: 9: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X **Whole Organism** ___ **Partial Organism**

Common name: Hawaiian Morwong
Scientific name: *Goniistius vittatus*
& size of specimens: 4: juvenile to 20cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X **Whole Organism** ___ **Partial Organism**

Common name: Bandit Angelfish
Scientific name: *Apolemichthys arcuatus*
& size of specimens: 8: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X **Whole Organism** ___ **Partial Organism**

Common name: Sling Jaw Wrasse
Scientific name: *Epibulus insidiator*
& size of specimens: 4: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X **Whole Organism** ___ **Partial Organism**

Common name: Thompson's Anthias
Scientific name: *Pseudanthias thompsoni*
& size of specimens: 20: juvenile to 10cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X **Whole Organism** ___ **Partial Organism**

Common name: Elegant Anthias
Scientific name: *Caprodon unicolor*
& size of specimens: 10: juvenile to 15cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X **Whole Organism** ___ **Partial Organism**

Common name: Bearded Armorhead
Scientific name: *Evistias acutirostris*
& size of specimens: 4: juvenile to 20cm
Collection location: Midway Atoll; various marine habitat from intertidal to <50m
 X **Whole Organism** ___ **Partial Organism**