

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Aquatic Resources  
Honolulu, Hawaii 96813

March 8, 2013

Board of Land and  
Natural Resources  
Honolulu, Hawaii

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National Monument Research Permit to John Burns, University of Hawaii, Hawaii Institute of Marine Biology, for Access to State Waters to Conduct Coral Disease Survey Reef Activities

The Division of Aquatic Resources (DAR) hereby submits a request for your authorization and approval for issuance of a Papahānaumokuākea Marine National Monument research permit to Scott Godwin, NOAA Office of National Marine Sanctuaries, Papahānaumokuākea Marine National Monument, pursuant § 187A-6, Hawaii Revised Statutes (HRS), chapter 13-60.5, Hawaii Administrative Rules (HAR), and all other applicable laws and regulations.

The research permit, as described below, would allow entry and research activities to occur in the Papahānaumokuākea Marine National Monument (Monument), including the NWHI State Marine Refuge and the waters (0-3 nautical miles) surrounding the following sites:

- Nihoa Island
- Necker Island (Mokumanamana)
- French Frigate Shoals
- Gardner Pinnacles
- Maro Reef
- Laysan Island
- Lisianski Island, Neva Shoal
- Pearl and Hermes Atoll
- Kure Atoll

The activities covered under this permit would occur between June 15, 2013 and June 14 20, 2014.

The proposed activities are a renewal of work previously permitted and conducted in the Monument.

INTENDED ACTIVITIES

The applicant proposes to conduct visual and photographic surveys for the purpose of assessing the health and community structure of shallow water to improve the understanding of coral disease and disease dynamics throughout the Monument.

These efforts would complement and expand upon the Rapid Assessment and Monitoring Program (RAMP) PMNM surveys by providing population level information and analysis including spatial and temporal trends for reduced health states and measures of severity for coral health. This field monitoring would occur utilizing traditional SCUBA along pre-determined 25 meter RAMP survey transects- any disease encountered would additionally be photographed. No collections would occur with this activity.

This activity would contribute to continuing research providing scientific information needed to support ecosystem approaches to the management of coral reef systems of the Monument. The activities directly support the Monument Management Plan's action plan 3.1.1 – Marine Conservation Science (through strategy MCS-1.2: Continue monitoring of shallow-water coral reef ecosystems to protect ecological integrity).

The activities described above may require the following regulated activities to occur in State waters:

- Touching coral, living or dead
- Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

## REVIEW PROCESS

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawaii Division of Aquatic Resources, Hawaii Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application has been posted on the Monument Web site since October 15, 2012, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

### **Comments received from the scientific community are summarized as follows:**

Scientific reviews support the acceptance of this application.

No questions were raised, the following comments came forward. Applicant responses are noted below.

QUESTIONS: None.

COMMENTS:

1. *There is no mention of collecting samples in the event an undescribed or novel disease state is observed. It may be to the advantage of the study if the applicant had the permitted authority to do so. This, of course, would require an amendment to the permit application and explanation of appropriate equipment sterilization techniques to minimize the risk of inadvertently spreading the disease.*

Sampling of coral tissue will not be necessary in order to complete our current research goals. Because it is not directly relevant to our research questions we

prefer to not collect any samples due to the complications involved with this process. Uncertainty over whether we should preserve samples for molecular or histological processing will make explanation of required chemicals and reagents vague, and also require special permitting for transport. Furthermore, it is unclear what causative agents are linked to each coral disease and state of reduced health. Therefore, we prefer to avoid sampling when there is no absolute way of ensuring the sampling method can contain the causative agent and eliminate risk of promoting disease spread.

2. *NOAA CRED will likely transition to a stratified-random site selection process (with some integration of fixed sites) on its next NWHI RAMP cruise. Data sharing between the applicant and NOAA CRED would increase the robustness of their respective surveys.*

This is an excellent comment. Data sharing will promote research collaboration and improve the utility of both datasets. In order to move forward in this direction, during the 2012 cruise we surveyed locations chosen by CRED from their stratified-random site selection. Thus all of our data from 2012 will be able to be analyzed in conjunction with NOAA CRED and RAMP data. We plan to continue using the CRED sites in order to increase the efficacy of our analyses and results and promote useful collaborative research.

3. *No sample collection.*

As stated above, we do not plan on collecting any coral samples. We wish to avoid doing any unnecessary harm to the coral reefs in the Monument.

4. *MMB agencies staff would be interested in a presentation on the results of the Applicants' 2012 research cruise in the PMNM if the Applicant is available.*

I would be more than happy to present our results from the 2012 surveys at a date and time that is suitable for the MMB agencies. Please let me know when this will work and I can prepare to present our research goals and findings.

**Comments received from the Native Hawaiian community are summarized as follows:**

Cultural reviews support the acceptance of this application. No concerns were raised.

**Comments received from the public are summarized as follows:**

No comments were received from the public on this application.

**Additional reviews and permit history:**

Are there other relevant/necessary permits or environmental reviews that have or will be issued with regard to this project? (e.g. MMPA, ESA, EA)      Yes       No

If so, please list or explain:

- The Department has made an exemption determination for this permit in accordance chapter 343, HRS, and Chapter 11-200, HAR. See Attachment (“DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT RESEARCH PERMIT TO SCOTT GODWIN, NOAA, OFFICE OF NATIONAL MARINE SANCTUARIES, PAPAĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT, FOR ACCESS TO STATE WATERS TO CONDUCT REEF ASSESSMENT AND MONITORING ACTIVITIES UNDER PERMIT PMNM-2013-008”)

Has Applicant been granted a permit from the State in the past? Yes  No   
 If so, please summarize past permits:

- The applicant was granted permit PMNM-2012-031 in 2012 to conduct these activities.

Have there been any a) violations: Yes  No   
 b) Late/incomplete post-activity reports: Yes  No

Are there any other relevant concerns from previous permits? Yes  No

STAFF OPINION

DAR staff is of the opinion that Applicant has properly demonstrated valid justifications for his application and should be allowed to enter the NWHI State waters and to conduct the activities therein as specified in the application with certain special instructions and conditions, which are in addition to the Papahānaumokuākea Marine National Monument Research Permit General Conditions. All suggested special conditions have been vetted through the legal counsel of the Co-Trustee agencies (see Recommendation section).

MONUMENT MANAGEMENT BOARD OPINION

The MMB is of the opinion that the Applicant has met the findings of Presidential Proclamation 8031 and this activity may be conducted subject to completion of all compliance requirements. The MMB concurs with the special conditions recommended by DAR staff.

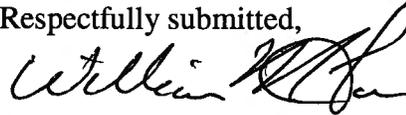
RECOMMENDATION

That the Board authorize and approve a Research Permit to Scott Godwin, NOAA Office of National Marine Sanctuaries, Papahānaumokuākea Marine National Monument, with the following special conditions:

1. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.

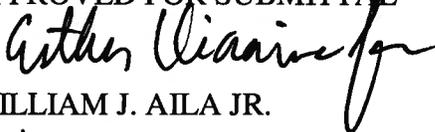
2. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.
3. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocol attached to this permit.
4. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.
5. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State Marine Refuge.
6. No fishing is allowed in State Waters except as authorized under State law for subsistence, traditional and customary practices by Native Hawaiians.

Respectfully submitted,



Administrator

APPROVED FOR SUBMITTAL



WILLIAM J. AILA JR.  
Chairperson

**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:** John Burns

**Affiliation:** UH Manoa, Hawai'i Institute of Marine Biology (HIMB), UH Hilo, Friends of Papahānaumokuākea (PPO)

**Permit Category:** Research

**Proposed Activity Dates:** June 15th - December 31 2013 (specific dates TBD)

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

**Proposed Locations:** (TBD, dependent on NOAA field cruise destinations)

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

4 (Dr. Ruth Gates, Dr. Misaki Takabayashi, Makani Gregg, and John Burns). Only 2 individuals will need to enter the Monument to perform field surveys.

**Estimated number of days in the Monument:** 30

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

a.) The proposed activity would...

Assess the health and community structure of corals on shallow-water reefs throughout the Papahānaumokuākea Marine National Monument. Our survey techniques will utilize a stratified random sampling approach to objectively survey the health of corals at multiple sites within the Monument. The resulting data will enable a comprehensive examination of coral health at large-spatial scales throughout the Monument. This work will build upon the data collected during the 2012 research activities.

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

Conduct surveys using SCUBA on shallow-water reefs to collect data on the health of corals as well as coral community structure. Detailed descriptions of the surveyed colonies and visible disease signs will be recorded. We will also conduct overlapping photo and video surveys in order to create digital reconstructions of the benthic habitat. Ultimately we will obtain detailed data on the community structure and health characteristics of surveyed corals. This research will allow us to decipher important characteristics of reduced health states affecting corals in the Papahānaumokuākea Marine National Monument.

c.) This activity would help the Monument by ...  
Enabling a detailed analysis of coral health and community structure on shallow-water reefs of the Papahānaumokuākea Marine National Monument. Surveying at randomly chosen coordinates within each site will create a robust dataset for an objective analysis of the prevalence and severity of coral health afflictions. The photo and video surveys will provide useful data for assessing the dynamics of coral community structure throughout the monument. This research will be critical for tracking changes to coral health and ecosystem function in the face of increasing global stressors such as climate change and ocean acidification.

**Other information or background:** Our coral health survey methods have proved useful for determining the severity and prevalence of reduced health states and diseases. This research is critical for assessing the impacts of coral health afflictions to the overall health and function of shallow-water coral reef ecosystems. Utilizing an objective and randomized survey approach on reefs throughout the Papahānaumokuākea Marine National Monument will enhance the capability of tracking and monitoring the health of coral populations within this valuable ecosystem. Currently, coral health and disease is assessed using permanent monitoring sites and repeatedly observed colonies. This method has great utility for tracking disease progression and incidence rates, however the data is less useful for determining disease characteristics at the population level. Our methodology will improve the knowledge of coral health in the Monument by creating a robust dataset pertaining to large-scale population characteristics. Ultimately, this will provide useful information for managers such as; spatial and temporal dynamics of reduced health states and disease, cofactors (species, colony size, depth, etc.) related to coral health, and measures of severity for each observed health affliction.

**Section A - Applicant Information**

**1. Applicant**

Name (last, first, middle initial): Burns, John, HR

Title: Ph.D. Candidate at UH Manoa

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

John HR Burns

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

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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

[REDACTED]

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

HIMB, UH Manoa, UH Hilo, PPO

**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. John Burns, Research Diver & Co-Principle Investigator, PhD Candidate at UH Manoa
2. Makani Gregg, Research Diver, MS Candidate at UH Hilo, PPO member
3. Misaki Takabayashi, Backup Research Diver & Co-Principle Investigate, UH Hilo Faculty
4. Ruth Gates, Co-Principle Investigator, HIMB Faculty
5. Research Diver TBD (in case an additional diver is needed or another member is unable to dive)

**\*\***(Only two research divers will need to enter the Monument to collect data)



**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 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:**

All surveys will be conducted on coral reefs at sites determined by the NOAA PMNM research coordinators. The exact locations are still to be decided.

**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 purpose of our proposed activities is to perform visual surveys to collect coral health data for shallow-water reefs throughout the Papahānaumokuākea Marine National Monument. This work is needed in order to monitor and track changes in coral health on reefs within this valuable and pristine ecosystem. Corals are the backbone of productive reef ecosystems throughout Hawai‘i, as global changes affect marine environments it is important to track and quantify impacts imposed on coral reefs. Collecting coral health data at sites within the Papahānaumokuākea Marine National Monument will also allow for comparisons to sites within the Main Hawaiian Islands. Collectively this data will facilitate comprehensive analyses of coral health throughout Hawaiian waters. The proposed methods in this permit will complement and improve upon the current assessments of coral health that utilize permanent survey sites and repeatedly surveyed colonies. Our approach of conducting surveys using a stratified random design will develop a robust dataset on coral health dynamics throughout the Monument, this information will be useful for managers to determine areas of high disease prevalence and severity. Collecting data in this manner will improve the spatial resolution of our understanding of coral health. Furthermore, continuing these surveys over time will equip managers with the capability to temporally track the health of coral populations within 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?

Our research activities are conducted with relatively no impact to the reefs other than our presence. All data is collected visually using transect surveys and photographs. The only physical impact is the deployments of transect tape. Transects will be carefully deployed and placed above the substrate in a manner to ensure no harmful contact with any living corals or other organisms. No tape will be wrapped or anchored in any manner that could damage any living coral or substrate. The methods used to deploy transect tape are nearly identical to those used for CRED research activities and will have the same negligible impact on living substrate. Our research team has substantial experience conducting surveys in this manner and is adequately trained (please see diver qualification descriptions in Question #7-F) to avoid imposing any harmful affects on the benthic substrate.

We avoid imposing any potential impacts on the cultural, natural, and historical resources by utilizing surveys that are conducted visually and require no physical contact or sampling of the environment. Our goal is to simply monitor the health of corals in order to ensure no degradation is occurring to these vital organisms. The personnel covered by this permit will behave in a respectful manner and operate within the guidelines created to protect and preserve the cultural resources of the Monument. All personnel has prior experience working in the Monument and have the utmost respect for the cultural resources of PMNM. Our primary goal is to provide data

that can aide the protection and conservation of the corals inhabiting the reefs throughout 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? As stated above, our goal is to gather information that can be used to aid the management of corals inhabiting reefs throughout the Monument. Hawaiian corals are a profound cultural resource. According to the Kumulipo, the coral polyp was the first life form to be created. This genealogical chant shows a deep respect for corals as the backbone of our productive marine ecosystems. Corals deserve this appreciation as they provide habitat for a plethora of creatures, many of which we depend on for food. It is very important that we work to conserve and protect Hawaiian corals, as they are clearly a vital cultural and ecological resource. Our goal is to collect data on the health and structure of coral communities in order to monitor and protect these organisms. Hawaiian corals can be considered as Kupuna that we must care for, as they are the ancestors and backbone of all marine life. Loss of corals will result in loss of habitat and function of the marine ecosystems. We hope our work will provide insight into the health of corals within the monument as well as what factors may be connected to reduced health and disease. Ultimately this work aims to safeguard these culturally and ecologically important organisms.

The research methods utilized in this study have no detrimental impacts on the marine ecosystems within the Monument. The goal of collecting coral health data is to determine the impacts of deleterious health afflictions and provide management with information necessary for maintaining healthy coral reef ecosystems. Implementing our proposed survey approach, utilizing random sampling design, will facilitate objective results at the population level. These results will allow managers to answer important questions about disease dynamics and patterns of coral health throughout the Monument. Our proposed methods will complement the annual Reef Assessment and Monitoring Program (RAMP) by providing more detailed data on coral health and disease. For instance, RAMP coral disease surveys utilize categorical variables for colony size and disease severity. Our methods utilize a Line Intercept Transect method, rather than Belt Transect, which gives divers necessary bottom time to measure each colony as well as visible lesions in order to record a direct quantitative measure of colony size and disease severity. Our methods also record more states of reduced health and disease, such as trematodiasis, tissue discoloration, hypermycosis, brown necrotizing disease, and multiple forms of algal growth (i.e. endolithic algal growth following tissue loss versus epilithic filamentous algae growing over coral tissue). Furthermore, we record extensive details of disease-related features such as colony morphology (branching, encrusting, etc.) and lesion descriptions proposed by Work and Aeby (2006, Diseases of Aquatic Organisms) in order to develop a comprehensive epizootiological (the study of the frequency, distribution, and causation of disease in an animal population; the counterpart in nonhuman animals of epidemiology) dataset. Conducting overlapping photo and video surveys provide a detailed assessment of coral community structure at each surveyed location. The resulting data enables a more thorough characterization of reduced coral health states and disease dynamics. Utilizing this epizootiological approach has enabled previous identification of environmental and biological

parameters (disease cofactors) associated with disease severity (Burns and Takabayashi 2011). Combining epizootiological data with ecosystem characterization data collected throughout the Monument may provide critical insight into environmental cofactors associated with coral health. By sampling with a stratified random design we will obtain an objective assessment of coral health and community structure that will complement data collected from permanent survey sites and repeatedly surveyed colonies. Repeating surveys at the same location and on the same colonies has excellent use for determining factors such as rates of incidence, transmission, and progression. However, these methods provide less information relevant to disease parameters, such as prevalence and severity, at the population level due to a degree of bias created by repeatedly surveying the same area. Utilizing the random sampling design will develop a robust dataset that will enable an objective determination of coral health characteristics at the population level. Ultimately, the dataset will allow for multiple disease parameters to be analyzed, in addition to those collected with RAMP and other surveys, in order to improve the understanding of coral health and disease dynamics throughout 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.

It is important that these research activities be conducted as they are not invasive and will provide useful data for monitoring and assessing coral health within the Monument. There is no practicable alternative as the goal is to develop a robust dataset pertaining to coral health dynamics within the Monument itself. Our proposed survey methodology will complement and enhance the current coral health data being collected in the Monument. Utilizing a stratified random sampling design will provide a platform to determine general trends of coral health (prevalence and severity, spatial and temporal patterns, disease cofactors) at the population level. This will complement the surveys being conducted at repeatedly visited sites and be immensely useful for assessing coral health characteristics throughout the Monument. Furthermore, this work will enable for comparison to sites throughout the 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?

This data will be of great value for aiding management decisions and tracking changes in coral health across spatial and temporal scales. The end value of these activities will greatly outweigh the impacts since the survey methods are non-invasive and will have relatively no effect on the coral reef ecosystems. Conducting surveys at several sites within the Monument will enable assessment of disease dynamics at various spatial scales. All transect locations will be georeferenced to enable multiple post-hoc spatial analyses. This will allow for determining if spatial patterns of disease prevalence and severity exist within sites or throughout the Monument. For instance, we have found water motion to be a cofactor of growth anomaly severity in East Hawai'i (Burns et al. 2010); by spatially analyzing coral health data from the Monument we will be able to determine if certain areas are more prone to coral health afflictions. By collating data pertaining to site characteristics (i.e. benthic data, water quality data, fish data) with coral health data we can try and identify cofactors of various disease states. We can also perform spatially-based analyses, such as the nearest neighbor algorithm, to investigate if the prevalence of certain afflictions display patterns indicative of vector-borne disease transmission. While our proposed

methods are more detailed than those conducted by RAMP surveys, certain basic parameters can still be combined to improve the spatial resolution of coral health data collected throughout the Monument. Data from the Monument can also be collated with data collected from the Main Hawaiian Islands to assess patterns in coral health across the Hawaiian archipelago. Furthermore, we can compare our findings with those collected from previous RAMP surveys to address changes in coral health over time. Continuing our surveys in the future will enable an even more robust temporal analysis, this may be very useful when investigating disease severity and can shed light on which health afflictions pose the largest "threat" to coral reefs within the Monument.

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

The duration of our activities is dependent on the planned NOAA research cruises. We will use the allotted time efficiently to maximize our data collection, therefore needing no time outside that planned by the PMNM research coordinators.

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

Our research team, Ruth, Misaki, Makani and myself, have been conducting coral health surveys throughout Hawai'i for several years. Our work has resulted in multiple publications and presentations. Misaki and Makani have also previously conducted research in the Monument and are members of PPO. We have a solid respect for the cultural importance of this site and hope to do our best to collect data, in an un-invasive manner, that can aide management of this immensely valuable ecosystem. The following has been added to our permit application to help clarify our response and provide more detailed information: Makani, an MS student at UH Hilo, has been a student as well as team leader for the University of Hawai'i Quantitative Underwater Ecological Survey Techniques (QUEST) course and currently works on several large grant collaborations collecting coral health data using SCUBA from several sites throughout Hawai'i Island. She is a lead scientific diver for the University of Hawai'i Diving Safety Program with an 80fsw depth rating and has completed NAUI Nitrox and Rescue Diver training. Miskai, a UH Hilo professor, is an instructor for QUEST as well as lead scientific diver for the University of Hawai'i Diving Safety Program with a 60fsw depth rating and has completed NAUI Nitrox training. Misaki has conducted coral surveys on reefs throughout Australia, while working at the University of Queensland and the University of Sydney, as well as reefs throughout the Hawaiian Islands. I myself, a PhD student at UH Manoa, am a graduate as well as an instructor for the QUEST program. I am NAUI instructor as well as a lead scientific diver and supervisor/trainer for the UH Dive Safety program, and I am also a certified fill station operator. Like Makani, I am also currently working on several large grant collaborations collecting coral health data using SCUBA from several sites throughout Hawai'i Island. Collectively our work has resulted in several coral health related publications and presentations that are listed below in our Permit Application as well as in my attached curriculum vitae.

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 research labs of Ruth (HIMB) and Misaki (UH Hilo Marine Science) are well funded by several grants and are equipped with all the analytical software necessary for disseminating the collected data. Due to the un-invasive nature of our survey methods we would be capable of mitigating any potential impacts if they occurred.

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.

Our methods and procedures are designed to be un-invasive and as thorough as possible. We utilize a unique approach to assessing coral health and colony characteristics in order to decipher the dynamics of health afflictions at the population scale. As mentioned above, our surveys use quantitative and detailed methodology to create a comprehensive epizootiological dataset pertaining to coral health for all surveyed areas. We plan to assess and measure any and all forms of visible coral health afflictions present on surveyed corals within the Monument. Several parameters, such as disease prevalence and severity, can be collated with RAMP data to assess temporal changes in coral health. If we are fortunate to perform these surveys in the future, we will be able to comprehensively assess changes in coral health over time on surveyed reefs throughout the Monument. Georeferencing our survey areas allow for various spatial analyses to be employed to investigate disease dynamics within and between surveyed sites. Georeferencing the coral health data will also enable spatial comparisons to sites within the Main Hawaiian Islands. Incorporating terrestrial and marine parameters in the spatially analyses will have great utility for determining ecosystem characteristics associated with coral health. Furthermore, our research labs are currently investigating the biological implications of various coral diseases. Once we determine the impacts of these diseases at the organismal level our findings can be collated with disease severity data to quantify the impact and threat of various diseases at the population level within the Monument. Ultimately, this work will provide the Monument with a comprehensive and robust dataset pertaining to the health of shallow-water coral reefs. Corals are a cultural and ecological resource, providing critical habitat to a multitude of marine species. It is important to determine disease cofactors and track health changes to avoid any large-scale mortality associated with outbreaks of disease.

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

Our work will be conducted in conjunction with the planned NOAA summer field cruises; we will therefore operate on NOAA vessels and be in compliance with all marine vessel requirements.

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

As stated above, our surveys are visual and will have no detrimental impacts to the corals or the reef structures. We do not plan on taking any samples and will therefore have no adverse impact on the coral reefs.

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

Surveys will be conducted using SCUBA, transport to the sites will be facilitated by NOAA research vessels. Two divers will descend on the shallow-water coral reef sites (~15-80ft) chosen for surveys. Divers will deploy a 25m transect at a pre-determined location in the direction of a pre-determined bearing. Transect locations will be established by utilizing a random stratified sampling design in order to objectively survey all study sites. Working in unison, divers will investigate all corals underneath the deployed transect tape. Divers will record multiple parameters, such as colony size and severity (proportional surface area), for each surveyed colony and visible health affliction. All observed colonies will also be photographed to facilitate digital image analyses. Divers will also conduct an overlapping photo and video survey so the transect can be digitally reconstructed. The analyzed data will be used to determine coral health dynamics (i.e. spatial, temporal, cofactors) for all surveyed reefs within the Monument.

**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:

N/A

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?**

N/A

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

We plan to collaborate with the Monument so all our coral health data can be archived and available when needed. The data collected by our proposed research activity will complement the coral health surveys presently being conducted at repeatedly observed sites. This will enable a more comprehensive understanding of disease characteristic (prevalence, severity, disease progression and incidence rates) at the population level across spatial scales throughout the Monument. The results of these combined studies will provide the Monument with useful data pertaining to the health of corals that can greatly aide management decisions in regards to coral reef health and function. We are also currently collaborating with several researchers to develop a 'Coral Health Atlas.' This is a website that will allow researchers to display results form coral health surveys at various study sites as well as environmental characteristics from each site/area. Our goal is to make survey results more accessible as well as visualized in the context of environmental characteristics. We hope this work will aid to decipher environmental characteristics, both marine and terrestrial, that drive the health of corals throughout the Hawaiian archipelago.

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

SCUBA gear (BCD, regulator, mask, fins, snorkels, weights, computers, compass, dive knife), slates, rulers, underwater cameras, transect tape.

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

N/A

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

N/A

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

Photo analyses, data analyses, a report write-up, and at least one publication will be completed within a year of the field surveys. We hope to complete several publications utilizing this coral health dataset within a few years of data collection.

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

- Burns JHR, Takabayashi M (2011) Histopathology of Growth Anomaly Affecting the Coral, *Montipora capitata*: Implications on Biological Functions and Population Viability. PLoS ONE 6(12): e28854
- Burns JHR, Rozet NK, Takabayashi M (2011) Morphology, severity, and distribution of growth anomalies in the coral, *Montipora capitata*, at Wai'ōpae, Hawai'i. Coral Reefs 30: 819-826
- Burns JHR (2011) Assessing the threat of growth anomalies on Hawaiian corals. Ka Pili Kai Spring Issue: 10
- Burns JHR (2010) It's not a tumor? Impacts of skeletal growth anomalies on Hawaiian corals. Ka Pili Kai Spring Issue: 6-7
- Takabayashi M, Gregg TM, Farah E, Burns J, Teves K, Cody NH (2010) The prevalence of skeletal growth anomaly and other afflictions in scleractinian coral at Wai'ōpae, Hawai'i. Proc 11th Int Coral Reef Symp 18: 820-824

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

## **Papahānaumokuākea Marine National Monument Compliance Information Sheet**

**1. Updated list of personnel to be covered by permit. List all personnel names and their roles here (e.g. John Doe, Diver; Jane Doe, Field Technician, Jerry Doe, Medical Assistant):** John Burns, Diver and Field Technician, HIMB. Makani Gregg, Reserve Diver UHH TCBES. Dr. Misaki Takabayashi, Reserve Diver, UHH Marine Science. Nyssa Silbiger, Reserve Diver, HIMB. Maya Walton, Reserve Diver, HIMB. Jamie Sziklay, Reserve Diver, HIMB. Courtney Couch, Reserve Diver, Cornell.

**2. Specific Site Location(s): (Attach copies of specific collection locations):** TBD

**3. Other permits (list and attach documentation of all other related Federal or State permits):** N/A

**3a. For each of the permits listed, identify any permit violations or any permit that was suspended, amended, modified or revoked for cause. Explain the circumstances surrounding the violation or permit suspension, amendment, modification or revocation.** N/A

**4. Funding sources (Attach copies of your budget, specific to proposed activities under this permit and include funding sources. See instructions for more information):** There is currently no specific funding supporting this research. Equipment needed for data collection and processing has already been purchased with previous Sea Grant and EPSCoR research funds. Salary for the divers, as well as equipment costs, will be supported by current CREST and EPSCoR grants awarded to PI Takabayashi and Gates at UHH and HIMB.

**5. Time frame:**

Activity start: 6/2013 - 5/2014. Specific dates TBD

Activity completion: 6/2013 - 5/2014. Specific dates TBD

Dates actively inside the Monument:

From: 6/2013 - 5/2014. Specific dates TBD

To: 6/2013 - 5/2014. Specific dates TBD

Describe any limiting factors in declaring specific dates of the proposed activity at the time of application: Information for this CIS is applies to research proposed between the dates of 6/2013 - 5/2014. No specific logistics has been determined for research activities within this timeframe. Once details are determined for future research cruises the CIS will be updated to provide that information,

Personnel schedule in the Monument: TBD

**6. Indicate (with attached documentation) what insurance policies, bonding coverage, and/or financial resources are in place to pay for or reimburse the Monument trustees for the necessary search and rescue, evacuation, and/or removal of any or all persons covered by the permit from the Monument: Divers are UH Scientific Divers and will therefore have DAN insurance to cover the expense for any search and rescue, evacuation, and/or removal of any persons.**

**7. Check the appropriate box to indicate how personnel will enter the Monument:**

- Vessel  
 Aircraft

Provide Vessel and Aircraft information: NOAA Ship Hi'ialakai R334

**8. The certifications/inspections (below) must be completed prior to departure for vessels (and associated tenders) entering the Monument. Fill in scheduled date (attach documentation):**

- Rodent free, Date:  
 Tender vessel, Date:  
 Ballast water, Date:  
 Gear/equipment, Date:  
 Hull inspection, Date:

**9. Vessel information (NOTE: if you are traveling aboard a National Oceanic and Atmospheric Administration vessel, skip this question):**

Vessel name:  
Vessel owner:  
Captain's name:  
IMO#:

Vessel ID#:  
Flag:  
Vessel type:  
Call sign:  
Embarkation port:  
Last port vessel will have been at prior to this embarkation:  
Length:  
Gross tonnage:  
Total ballast water capacity volume (m3):  
Total number of ballast water tanks on ship:  
Total fuel capacity:  
Total number of fuel tanks on ship:  
Marine Sanitation Device:  
Type:

Explain in detail how you will comply with the regulations regarding discharge in the Monument. Describe in detail. If applicable, attach schematics of the vessel's discharge and treatment systems:

Other fuel/hazardous materials to be carried on board and amounts:

Provide proof of a National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement-approved Vessel Monitoring System (VMS). Provide the name and contact information of the contractor responsible for installing the VMS system. Also describe VMS unit name and type:

VMS Email:  
Inmarsat ID#:

\* Individuals MUST ENSURE that a type-approved VMS unit is installed and that its automatic position reports are being properly received by the NOAA OLE system prior to the issuance of a permit. To make sure your VMS is properly configured for the NOAA OLE system, please contact NOAA OLE at (808) 203-2503 or (808) 203-2500.

\* PERMITS WILL NOT BE ISSUED TO INDIVIDUALS ENTERING THE MONUMENT VIA VESSEL UNTIL NOAA OLE HAS CONTACTED THE MONUMENT PERMIT COORDINATOR WITH A 'POSITIVE CHECK' READING.

#### **10. Tender information:**

On what workboats (tenders) will personnel, gear and materials be transported within the Monument? List the number of tenders/skiffs aboard and specific types of motors:



### **Additional Information for Land Based Operations**

**11. Proposed movement of personnel, gear, materials, and, if applicable, samples:**

N/A, there are no proposed land-based activities for this permit.

**12. Room and board requirements on island: NA**

**13. Work space needs: NA**

**DID YOU INCLUDE THESE?**

- Map(s) or GPS point(s) of Project Location(s), if applicable
- Funding Proposal(s)
- Funding and Award Documentation, if already received
- Documentation of Insurance, if already received
- Documentation of Inspections
- Documentation of all required Federal and State Permits or applications for permits

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

March 8, 2013

WILLIAM J. AILA, JR.  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

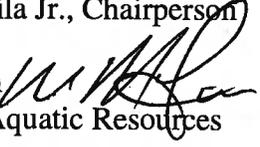
ESTHER KIA'AINA  
FIRST DEPUTY

WILLIAM M. TAM  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

TO: Division of Aquatic Resources File

THROUGH: William J. Aila Jr., Chairperson

FROM: William Tam   
Division of Aquatic Resources

DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAHA NAUMOKUĀKEA MARINE NATIONAL MONUMENT RESEARCH PERMIT TO JOHN BURNS, UNIVERSITY OF HAWAII, HAWAII INSTITUTE OF MARINE BIOLOGY, FOR ACCESS TO STATE WATERS TO CONDUCT REEF ASSESSMENT AND MONITORING ACTIVITIES UNDER PERMIT PMNM-2013-008.

The following permitted activities are found to be exempted from preparation of an environmental assessment under the authority of Chapter 343, HRS and Chapter 11-200, HAR:

Project Title:

Papahānaumokuākea Marine National Monument Research Permit to John Burns, University of Hawaii, Hawaii Institute of Marine Biology, for Access to State Waters to Conduct Coral Disease Survey Activities

Permit Number: PMNM-2013-008

Project Description:

The research permit application, as described below, would allow entry and activities to occur in Papahānaumokuākea Marine National Monument (Monument), including the NWHI State waters between June 15, 2013 and June 14, 2014.

This is an effort to conduct coral disease assessment activities throughout the Monument, which compliments the Pacific Reef Assessment and Monitoring Program (RAMP). To conduct these activities traditional SCUBA would be utilized to complete visual and photographic surveys of shallow water coral reef sites. No resources will be collected as a result of this activity.

These activities are in direct support of the Monument Management Plan's priority management needs 3.1 – Understanding and Interpreting the NWHI, through action plan 3.1.1 – Marine Conservation Science. This action plan includes a strategy to “Continue monitoring of shallow-water coral reef ecosystems to protect ecological integrity”.

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Activities to support marine conservation science in the NWHI are addressed in the Monument Management Plan Environmental Assessment (December 2008) which resulted in a FONSI, or a finding of no significant impact. This EA specifically covers field activities, such as those being proposed, that will “characterize shallow-water marine habitats” (PMNM MMP Vol 2, p.70).

Consulted Parties:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawaii Division of Aquatic Resources, Hawaii Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application has been posted on the Monument Web site since October 15th, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument’s Public Notification Policy.

Exemption Determination:

After reviewing HAR § 11-200-8, including the criteria used to determine significance under HAR § 11-200-12, DLNR has concluded that the activities under this permit would have minimal or no significant effect on the environment and that issuance of the permit is categorically exempt from the requirement to prepare an environmental assessment based on the following analysis:

1. All activities associated with this permit, including monitoring and collection activities, have been evaluated as a single action. As a preliminary matter, multiple or phased actions, such as when a group of actions are part of a larger undertaking, or when an individual project is precedent to or represents a commitment to a larger project, must be grouped together and evaluated as a single action. HAR § 11-200-7. Since this permit involves an activity that is precedent to a later planned activity, i.e. the continuation of reef monitoring activities, the categorical exemption determination here will treat all planned activities as a single action.

2. The Exemption Class for Scientific Research with no Serious or Major Environmental Disturbance Appears to Apply. Chapter 343, HRS, and § 11-200-8, HAR, provide for a list of classes of actions exempt from environmental assessment requirements. HAR §11-200-8.A.5. exempts the class of actions which involve “basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource.” This exemption class has been interpreted to include “surveys, censuses, inventories, studies, photographing, recording, sampling, collection, culture and captive propagation of aquatic biota”, such as those being proposed.

The proposed collection activities here appear to fall squarely under the exemption class #5, exempt item #5 as described under the former Fish and Game Division exemption list published in January 19, 1976. As discussed below, no significant disturbance to any environmental resource is anticipated in the sampling of Monument resources. Thus, so long as the below considerations are met, an exemption class should include the action now contemplated.

3. Cumulative Impacts of Actions in the Same Place and Impacts with Respect to the Potentially Particularly Sensitive Environment Will Not be Significant. Even where a categorical exemption appears to include a proposed action, the action cannot be declared exempt if “the cumulative

impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment.” HAR § 11-200-8.B. To gauge whether a significant impact or effect is probable, an exempting agency must consider every phase of a proposed action, any expected primary and secondary consequences, the long-term and short-term effects of the action, the overall and cumulative effect of the action, and the sum effects of an action on the quality of the environment. HAR § 11-200-12. Examples of actions which commonly have a significant effect on the environment are listed under HAR § 11-200-12.

The activities would be a continuation of work previously conducted by this applicant and others, which involved monitoring and collection activities to characterize shallow-water marine habitats. A permit for this activity was issued last year, and it is likely that future requests for permits will be received to continue this work. No deleterious effects have resulted from these activities in the past. With this in mind, significant cumulative impacts are not anticipated as a result of this activity, and numerous safeguards further ensure that the potentially sensitive environment of the project area will not be significantly affected. All activities would be conducted in a manner compatible with the management direction of the Monument Proclamation in that the activities do not diminish monument resources, qualities, and ecological integrity, or have any indirect, secondary, cultural, or cumulative effects. The joint permit review process did not reveal any anticipated indirect or cumulative impacts, nor did it raise any cultural concerns, that would occur as a result of these activities.

The activities would be conducted from the NOAA Ship HI'IALAKAI (PMNM-2013-005) during its cruises with logistics still pending for the 2014 calendar year. Concurrent research projects on this cruise, though expected, are unknown at this time. Since this activity is designed to complement the reoccurring shallow water assessment activities and no resource collections result from this activity, there is little concern for cumulative impacts.

Since no significant cumulative impacts or significant impacts with respect to any particularly sensitive aspect of the project area are anticipated, the categorical exemptions identified above should remain applicable.

4. Overall Impacts will Probably be Minimal and Insignificant Any foreseeable impacts from the proposed activity will probably be minimal, and further mitigated by general and specific conditions attached to the permit. Specifically, all research activities covered by this permit will be carried out with strict safeguards for the natural, historic, and cultural resources of the Monument as required by Presidential Proclamation 8031, other applicable law and agency policies and standard operating procedures.

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Conclusion. Upon consideration of the permit to be approved by the Board of Land and Natural Resources, the potential effects of the above listed project as provided by Chapter 343, HRS and Chapter 11-200 HAR, have been determined to be of probable minimal or no significant effect on the environment and exempt from the preparation of an environmental assessment.

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William J. Aila Jr.  
Board of Land and Natural Resources

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Date