

State of Hawai'i  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Aquatic Resources  
Honolulu, Hawai'i 96813

August 10, 2018

Board of Land and Natural Resources  
Honolulu, Hawai'i

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National Monument Research Permit to Dr. Timothy Grabrowski, University of Hawai'i, Hilo for Access to State Waters to Conduct the lethal removal of Blue Striped Snapper for Age Growth Studies

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 Dr. Timothy Grabrowski, University of Hawai'i, Hilo, pursuant to § 187A-6, Hawai'i Revised Statutes (HRS), Chapter 13-60.5, Hawai'i Administrative Rules (HAR), and all other applicable laws and regulations.

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

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

The activities covered under this permit would occur between August 15, 2018 thru August 14, 2019. While this study and the Applicant are new, the proposed activities, the limited amount of lethal removal of fishes has been previously permitted and conducted in the Monument.

INTENDED ACTIVITIES

Dr. Timothy Grabrowski (applicant) proposes to lethally sample of Bluestriped Snapper (ta'ape) *Lutjanus kasmira* in order to provide specimens for an age and growth study throughout its introduced range in the Hawaiian Archipelago. Up to six individuals would conduct proposed activities consisting of swimming, snorkeling, SCUBA diving, and the lethal removal of 10 *L.kasmira* (140 total) from each of the following proposed islands/atolls (marine areas only) and

seamounts locations including: French Frigate Shoals, Maro Reef, Laysan Island, Lisianski, Pearl and Hermes Atoll, Midway Atoll, Kure Atoll, Brooks Bank, St. Rogatien Bank, Raita Bank, Northampton Seamount, Pioneer Bank, Nero Seamount, and Ladd Seamount. Sampling would be opportunistic and would be conducted by research divers also covered under separately permitted activities (PMNM-2018-001, PMNM-2018-029, PMNM-2018-031). The proposed activities would occur during NOAA's annual reef assessment and monitoring program aboard a research expedition on NOAA Ship HI'IALAKAI (vessel operations separately permitted under permit no. PMNM-2018-001). The research cruise is currently scheduled for August 23, 2018 – September 16, 2018.

All individuals would abide by the following PMNM Best Management Practices (BMPs):

- BMPs for Boat Operations and Diving Activities (BMP # 004)
- General Storage and Transport Protocols for Collected Samples (BMP # 006)
- Marine Wildlife Viewing Guidelines (BMP # 010)
- Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment (BMP # 011)
- Best Practices for Maritime Heritage Sites (BMP #017)

The activities will benefit the conservation and management of the Monument by supporting the Monument Management Plan (MMP) as described in:

Marine Conservation Science Action Plan (MCS) 1: Continue and enhance research, characterization, and monitoring of marine ecosystems for the life of the plan, as appropriate.

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

- Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving monument resource
- Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument
- 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: Hawai'i Division of Aquatic Resources, Hawai'i 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 July 6, 2018 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:**

### QUESTIONS:

None

### COMMENTS / RECOMMENDATIONS:

1. Those covered under the permit must review and abide by the Best Management Practices for Boating Operations and Diving Activities, and the Disease and Introduced Species Prevention Protocol that are in place for the Monument.

*Noted. All personnel who will be collecting within Papahānaumokuākea Marine National Monument will be provided with copies of the Best Management Practices for Boating Operations and Diving Activities, and the Disease and Introduced Species Prevention and asked to review them prior to departure.*

2. No problems with number of specimens requested for ta'ape. Non-native species that has a known population and range throughout the Main Hawaiian Islands and NWHI. Fairly commonly encountered species.

*Noted.*

3. Make sure the applicant preforms good biosecurity measures for marine aquatic invasive spp. Introduction. They need to clean their gear and inspect their pockets to ensure they don't have any invasive alga or other organism. Clean their gear by rinsing/soaking in a diluted beach solution. They also need to do a bleach soak/rinse between atoll/islands/reef within the Monument.

*Noted. All personnel who will be collecting within Papahānaumokuākea Marine National Monument are familiar with the biosecurity protocols and will receive a review of these protocols prior to departure.*

4. The fish collectors are all very experienced and skilled. They should know to try to reduce breaking corals and adversely impacting the substrate with spears if they miss the target.

*Noted. All personnel who will be collecting within Papahānaumokuākea Marine National Monument are experienced with spearfishing and will do everything in their power to avoid contacting the substrate in the event of a missed shot.*

5. Good and interesting study. We're curious to see how large the populations are and how far they have made it up the chain.

*Thank you. We will be sure to keep everyone in the loop as the study progresses.*

**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:

- An informal review of all aforementioned activities following section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA; 16 U.S.C. 1855(b)) is currently underway. The outcome of this review may require the applicant to adhere to other NMFS-prescribed conditions. Such conditions would be reflected in the PMNM permit, prior to issuance.
- A request is currently underway to the National Marine Fisheries Service (NMFS) to cover all proposed activities under PMNM's programmatic ESA Section 7 informal consultation. The outcome of this consultation may require the applicant to adhere to other NMFS-prescribed conditions. Such conditions would be reflected in the PMNM permit, prior to issuance.
- The Department has made an exemption determination for this permit in accordance with 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 PAPAHAŌNAUMOKUĀKEA MARINE NATIONAL MONUMENT RESEARCH PERMIT TO DR. TIMOTHY GRABROWSKI, UNIVERSITY OF HAWAII, HILO, FOR ACCESS TO STATE WATERS TO CONDUCT LETHALLY SURVEY BLUESTRIPED SNAPPER UNDER PERMIT PMNM-2018-032").

Has Applicant been granted a permit from the State in the past? Yes  No

If so, please summarize past permits: N/A

Have there been any a) violations:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
b) Late/incomplete post-activity reports:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Are there any other relevant concerns from previous permits?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>

STAFF OPINION

PMNM 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 the following 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 PMNM staff.

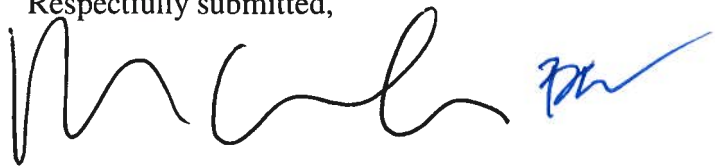
RECOMMENDATION:

That the Board authorize and approve a Research Permit to Dr. Timothy Grabrowski, University of Hawai'i, Hilo, with the following special conditions:

- a. That the Board declare that the actions which are anticipated to be undertaken under this permit will have little or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment.
- b. Upon the finding and adoption of the department's analysis by the Board, that the Board delegate and authorize the Chairperson to sign the declaration of exemption for purposes of recordkeeping requirements of chapter 343, HRS, and chapter 11-200, HAR.
- c. That the permittee provide, to the best extant possible, a summary of their Monument access, including but not limited to, any initial findings to the DLNR for use at educational institutions and outreach events.
- d. 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.
- e. 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.

- f. 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.
- g. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.
- h. 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.

Respectfully submitted,



Maria Carnevale  
Papahānaumokuākea Marine National Monument

APPROVED FOR SUBMITTAL



SUZANNE CASE  
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:  
NOAA/Inouye Regional Center  
NOS/ONMS/PMNM/Attn: Permit Coordinator  
1845 Wasp Blvd, Building 176  
Honolulu, HI 96818  
nwhipermit@noaa.gov  
PHONE: (808) 725-5800      FAX: (808) 455-3093

**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:** Timothy Grabowski

**Affiliation:** U.S. Geological Survey-Hawai'i Cooperative Fishery Research Unit,  
University of Hawai'i at Hilo

**Permit Category:** Research

**Proposed Activity Dates:** August 23, 2018-Sept. 16, 2018

**Proposed Method of Entry (Vessel/Plane):** NOAA ship Hi'ialakai

**Proposed Locations:** French Frigate Shoals, Maro Reef, Laysan, Lisianski, Pearl and Hermes Atoll, Midway Atoll, Kure Atoll, Brooks Bank, St. Rogatien Bank, Raita Bank, Northhampton Seamount, Pioneer Bank, Nero Seamount, Ladd Seamount

**Estimated number of individuals (including Applicant) to be covered under this permit:** 4

**Estimated number of days in the Monument:** 23

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

- a.) The proposed activity would provide specimens for an age and growth study of Bluestriped Snapper (ta'ape) *Lutjanus kasmira* throughout its introduced range in the Hawaiian Archipelago. The objectives of the study are to 1) evaluate whether there is a latitudinal gradient in the growth rate of Bluestriped Snapper across the Hawaiian Archipelago; 2) compare growth rates of Bluestriped Snapper from populations on the windward and leeward sides of the Main Hawaiian Islands; and 3) compare contemporary growth rates throughout the Hawaiian Archipelago to growth rates from 30 years ago in O'ahu and contemporary growth rates from throughout the native range.
  
- b.) To accomplish this activity we would need to collect 5-10 whole Bluestriped Snapper via spear from at least three of the proposed locations, freeze them whole and return them to laboratory facilities at the University of Hawai'i at Hilo. Once there, individuals will be thawed, photographed to serve as vouchers, measured to the nearest mm total length and standard length, and weighed to the nearest 1.0 g. Sex will be determined from a macroscopic examination of the gonads. The sagittal otoliths will be removed, mounted and sectioned, and used for age estimation following the methods described by Long and Grabowski



(2017). Additional tissues, e.g., stomach contents, fin clips, muscle tissue, will be archived at the University of Hawai'i at Hilo for potential future use.

- c.) This activity would help the Monument by generating data to provide a better understanding of how individual growth rate of Bluestriped Snapper varies throughout the Hawaiian Archipelago and how it compares to the growth rate of native populations. Because individual growth rate is one of the primary factors driving the intrinsic growth rate of a population, it is an important component for assessing whether Bluestriped Snapper populations in the Hawaiian Archipelago are reaching an equilibrium. Further, an examination of the growth rates of populations from the Northwestern Hawaiian Islands may provide insights on the physiological and ecological capacity of the species to continue expanding its range.

**Other information or background:**

Bluestriped Snapper was introduced during 1955-1961 to O'ahu and rapidly spread, establishing populations through the Hawaiian Archipelago (Randall 1987; Schumacher and Parrish 2005). Morales-Nin and Ralston (1990) found that Bluestriped Snapper collected from O'ahu exhibited growth rates considerably higher than individuals from populations within the native range. This high growth rate was maintained in spite of O'ahu being at a higher latitude than any of the native populations. This elevated growth rate is not uncommon in invasive populations of fishes (Rypel 2013) and has been well documented with invasive Red Lionfish *Pterois volitans* in the Caribbean, Gulf of Mexico, and western Atlantic Ocean (see Johnson and Swenarton 2016 for review). The high growth rate exhibited by members of introduced populations is typically associated with negative impacts on native species through predation and/or competition. However, unequivocal evidence of Bluestriped Snapper impacts on Hawaiian reefs has not been reported (Parrish et al. 2000; Grigg et al. 2008; Fukunaga et al. 2017).

Unfortunately, there has been no attempt to characterize Bluestriped Snapper growth rates at other locations in the Hawaiian Archipelago, nor any effort to evaluate whether growth rates have changed since last examined in 1990. Individual growth rate is one of the primary factors driving the intrinsic growth rate of a population. Therefore, a better understanding of how individual growth rate of Bluestriped Snapper varies throughout the Hawaiian Archipelago and how it compares to the growth rate of native populations is important for evaluating whether Bluestriped Snapper populations in the Hawaiian Archipelago may be reaching an equilibrium. Further, an examination of the growth rates of populations from the Northwestern Hawaiian Islands may provide insights on the physiological and ecological capacity of the species to continue expanding its range.

References

- Fukunaga A, RK Kosaki, and BB Hauk. 2017. Distribution and abundance of the introduced snapper *Lutjanus kasmira* (Forsskål) on shallow and mesophotic reefs of the Northwestern Hawaiian Islands. *Bioinvasions Rec* 6:259-268.
- Grigg RW, J Polovina, AM Friedlander, and SO Rohmann. 2008. Biology of coral reefs in the Northwestern Hawaiian Islands. Pages 573-594 in BM Riegl and RE Dodge, eds. *Coral reefs of the USA*. Springer.

- Johnson EG, and MK Swenarton. 2016. Age, growth and population structure of invasive lionfish (*Pterois volitans/miles*) in northeast Florida using a length-based, age-structured population model. PeerJ 4:e2730. doi:10.7717/peerj.2730
- Long JM, and TB Grabowski. 2017. Otoliths. Pages 189-220 in MC Quist and DA Isermann, eds. Age and growth of fishes: principles and techniques. American Fisheries Society, Bethesda, Maryland
- Morales-Nin B and S Ralston. 1990. Age and growth of *Lutjanus kasmira* (Forsskål) in Hawaiian waters. J Fish Biol 36:191-203.
- Parrish JD, GS Aeby, EJ Conklin, GL Ivey, and BD Schumacher. 2000. Interactions of nonindigenous Blueline Snapper (Ta'ape) with native fishery species. Report to Hawai'i Department of Land and Natural Resources, Division of Aquatic Resources.
- Randall JE. 1987. Introductions of marine fishes to the Hawaiian Islands. Bull Mar Sci 41:490-502.
- Rypel AL. 2013. Do invasive freshwater fishes grow better when they are invasive? Oikos 123:279-289.
- Schumacher BD and JD Parrish. 2005. Spatial relationships between an introduced snapper and native goatfishes on Hawaiian reefs. Biol Invasions 7:925-933.

## **Section A - Applicant Information**

### **1. Applicant**

Name (last, first, middle initial): Grabowski, Timothy B.  
Title: Unit Leader, Hawai'i Cooperative Fishery Research Unit  
Adjunct Associate Professor, University of Hawai'i at Hilo

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

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

[REDACTED]

Phone: [REDACTED]

Email: [REDACTED]

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

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

Hawai'i Cooperative Fishery Research Unit (USGS)  
University of Hawai'i at Hilo

**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):**

Randall Kosaki, Ph.D., Research Diver and field PI, NOAA PMNM

Keolohilani H. Lopes, M.S., Research Diver, NOAA PMNM

Jason Leonard, Research Diver, PMNM

Brian Hauk, M.S., Research Diver, NOAA PMNM

Joshua Copus, M.S., Research Diver, HIMB

**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"/> <b>French Frigate Shoals</b>     | <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"/> <b>Maro Reef</b>                 | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <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"/> <b>Pearl and Hermes Atoll</b>    | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> <b>Midway Atoll</b>              | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> <b>Kure Atoll</b>                | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> Other (seamounts listed on p. 2) |                                     |   |                                     |

**Ocean Based**

NOTE: For purposes of this application, shallow water is defined by water less than 100 meters in depth.

NOTE: Primary targets are in bold. Other locations are checked as weather contingencies.

Remaining ashore on any island or atoll (with the exception of Sand Island, at Midway Atoll and field camp staff on other islands/atolls) between sunset and sunrise.

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

Location Description:

Outer forereefs of all locations checked above. "Other" box is checked above and refers to seamounts listed on p.2. (Brooks Bank, St. Rogatien Bank, Raita Bank, Northhampton Seamount, Pioneer Bank, Nero Seamount, Ladd Seamount. 50-100 m depths.

**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 the proposed activity is to provide specimens for an age and growth study of Bluestriped Snapper (ta'ape) *Lutjanus kasmira* throughout its introduced range in the Hawaiian Archipelago. There has been no attempt to characterize Bluestriped Snapper growth rates at locations other than O'ahu in the Hawaiian Archipelago, nor any effort to evaluate whether growth rates have changed since last examined in 1990. Individual growth rate is one of the primary factors driving the intrinsic growth rate of a population. Therefore, a better understanding of how individual growth rate of Bluestriped Snapper varies throughout the Hawaiian Archipelago and how it compares to the growth rate of native populations is important for evaluating whether Bluestriped Snapper populations in the Hawaiian Archipelago are reaching an equilibrium. Further, an examination of the growth rates of populations from the Northwestern Hawaiian Islands may provide insights on the physiological and ecological capacity of the species to continue expanding its range. The objectives of the study are to 1) evaluate whether there is a latitudinal gradient in the growth rate of Bluestriped Snapper across the Hawaiian Archipelago; 2) compare growth rates of Bluestriped Snapper from populations on the windward and leeward sides of the Main Hawaiian Islands; and 3) compare contemporary growth rates throughout the Hawaiian Archipelago to grow rates from 30 years ago in Hawaii and contemporary growth rates from throughout the native range. To accomplish this activity we would need to collect 5-10 whole Bluestriped Snapper via spear from at least three of the proposed locations, freeze them whole and return them to laboratory facilities at the University of Hawai'i at Hilo. Once there, individuals will be thawed, photographed to serve as vouchers, measured to the nearest mm total length and standard length, and weighed to the nearest 1.0 g. Sex will be determined from a macroscopic examination of the gonads. The sagittal otoliths will be removed, mounted and sectioned, and used for age estimation following the methods described by Long and Grabowski (2017).

\*Considering the purpose of the proposed activities, do you intend to film / photograph federally protected species?    Yes  No

If so, please list the species you specifically intend to target.

For a list of terrestrial species protected under the Endangered Species Act visit:

<http://www.fws.gov/endangered/>

For a list of marine species protected under the Endangered Species Act visit:

<http://www.nmfs.noaa.gov/pr/species/esa/>

For information about species protected under the Marine Mammal Protection Act visit:

<http://www.nmfs.noaa.gov/pr/laws/mmpa/>

**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?

No activities will be performed in the vicinity of known historical resources. If any such resources are discovered in the course of these proposed activities, their location(s) will be noted and reported to appropriate experts and authorities. Our collection activities will cease immediately, and will be continued in another area.

Since samples will be collected using spear, there is no chance of bycatch. Further the sample size is extremely small relative to the local population sizes of Bluestriped Snapper at the proposed sample locations and given that the target species is invasive and potentially detrimental to native fauna, removal will have no negative effects.

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

The proposed activities will support PMNM Management Plan's Marine Conservation Science Action plan to "Continue and enhance research, characterization, and monitoring of marine ecosystems" (MCS-1), and to "Survey distributions and populations of known alien species at regular intervals" (AS-2.1)

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.

No, there is no practicable alternative to conducting the activity within the Monument. The monument represents the northernmost Bluestriped Snapper populations, native or introduced, in the world. Therefore, there are no surrogate populations at similar latitudes that could be sampled to gain similar insights as to whether there is a latitudinal gradient in the growth rate of Bluestriped Snapper across the Hawaiian Archipelago.

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

Collection of Bluestriped Snapper will have virtually no impacts on native species, natural resources, or ecological integrity. In addition, sampling invasive species is beneficial to the ecosystem as they will be removed from the community.

Impacts to natural resources from this proposed project are minimal, verging on undetectable. We will not be working in the vicinity of any known historic resources, thus impacts to those resources are not expected. Similarly, impacts to cultural resources (beyond the collection of specimens as requested) are not expected. The information gained from these activities are critical to increasing manager's understanding of the ecosystems within PMNM, and important to understanding the factors that may limit the expansion of this invasive species' range.

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

Sampling is opportunistic, and will be conducted by scientists who are permitted to work in the Monument for other research projects. Thus, the duration of this activity is driven by the total length of the research cruise rather than the total amount of time required to collect our minimum number of specimens.

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

The field personnel mentioned above have conducted hundreds of research dives within PMNM and have extensive spearfishing experience. All are extremely proficient with field identification of the fishes present within PMNM. The principal investigator, Dr. Timothy Grabowski, is a Research Fish Biologist with the U.S. Geological Survey and the Unit Leader of the Hawai'i Cooperative Fishery Research Unit. He has 18 years of experience using otoliths, scales, and other structures to estimate fish age. Dr. Grabowski has authored two book chapters and six peer-reviewed journal articles on the subject and trained numerous graduate and undergraduate students.

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.

Sampling is opportunistic, and will be conducted by scientists who will be working in the Monument for other research projects. The Cooperative Fishery Research Unit has sufficient base funding to support the cost of processing the fish and otolith samples upon arrival in Hilo.

Impacts to natural resources from this proposed project are minimal, verging on undetectable. Therefore, we cannot foresee any impacts generated by the proposed activities that would require mitigation.

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 appropriate to achieve the goals of the proposed project in relation to their impacts to PMNM cultural, natural, and historic resources, qualities, and ecological integrity. Analysis of otoliths is generally regarded as the most reliable method for estimating the age and growth of fishes. This method will use a small sample of Bluestriped Snapper, an invasive species, collected using spearfishing which will result in no bycatch or impacts to the reef structure.

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

Yes.

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 issuance of a permit inappropriate under the Proclamation and its Findings section. The sample sizes are very small, the information potentially gained is invaluable to managers.

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

We propose collecting 5-10 whole Bluestriped Snapper via spear from at least three of the locations listed above. Upon removal from the water, they will be frozen and returned to laboratory facilities at the University of Hawai'i at Hilo. Once there, individuals will be thawed, photographed to serve as vouchers, measured to the nearest mm total length and standard length, and weighed to the nearest 1.0 g. Sex will be determined from a macroscopic examination of the gonads. The sagittal otoliths will be removed, mounted and sectioned using a low-speed isometric saw. The thin sections will be polished and examined under the microscope to count annuli and measure the radius of the otolith at each annulus following the methods described by Long and Grabowski (2017). Additional tissues, e.g., stomach contents, fin clips, muscle tissue, will be archived at the University of Hawai'i at Hilo for potential future use.

**NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding.**

**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 names:

Bluestriped Snapper, but the species is also known as Common Bluestripe Snapper, Blue-banded Hussar, Blue-banded Sea Perch, Blue-banded Snapper, Bluebanded Snapper, Blue-lined Sea Perch, Bluelined Snapper, Blue-lined Snapper Fish, Blue-striped Seaperch, Blue-striped Snapper, Bluestripe Seaperch, Bluestripe Snapper,

Common Blue-strips Snapper, Four-lined Snapper, Moonlighter, Yellow and Blue Seaperch, Madras, Perche à Raies Bleues, Vivaneau à Raies, Bleues, Pargo de Rayas Azules, and Ta'ape.

Scientific names:

*Lutjanus kasmira*

# & size of specimens:

Ten individual fish of various sizes from will be collected by pole spear at three islands or reefs for a total sample size of 30 Bluestriped Snapper. Exact locations will be determined by field staff, and will depend on weather, diving conditions, and the availability of the desired species.

Collection location:

Nihoa, Mokumanama, French Frigate Shoals, Gardner Pinnacles, Maro, Laysan, Lisianski, Pearl and Hermes, Midway, Kure, Brooks Bank, St. Rogatien Bank, Raita Bank, Northhampton Seamount, Pioneer Bank, Nero Seamount, Ladd Seamount

Whole Organism  Partial Organism

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

Specimens will be analyzed as described above at the University of Hawai'i at Hilo. A digital photograph will be taken of each individual to serve as a voucher. In addition to otoliths, tissue samples, such as gut contents, fin clips, muscle samples, will be taken from the specimens and archived. The remainder of the fish will be disposed of following University of Hawai'i at Hilo regulations.

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

• General site/location for collections:

TBD

• Is it an open or closed system? N/A

• Is there an outfall? N/A

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

• Will organisms be released?

No.

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

Frozen whole.

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

Results from the proposed project will be published as soon as practicable. The Principal Investigator is unaware of other researchers conducting studies that would utilize the other tissue samples being harvested from the sampled fish.

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

Pole spear, hand nets, plastic bag.

**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**

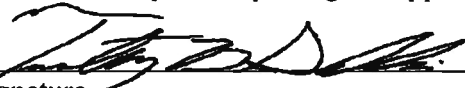
**14. Provide a time line for sample analysis, data analysis, write-up and publication of information:**

Writing and publication will commence when an adequate sample size of specimens or data have been collected. Submission, peer review, and final publication can take on average two months to one year.

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

The Principal Investigator has no publications directly related to the proposed project.

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

07 June 2018  
Date

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Papahānaumokuākea Marine National Monument  
Permit Application - Research  
OMB Control # 0648-0548  
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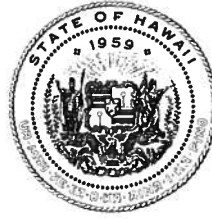
**SEND ONE SIGNED APPLICATION VIA MAIL TO THE MONUMENT OFFICE  
BELOW:**

NOAA/Inouye Regional Center  
NOS/ONMS/PMNM/Attn: Permit Coordinator  
1845 Wasp Blvd, Building 176  
Honolulu, HI 96818  
FAX: (808) 455-3093

**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

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF AQUATIC RESOURCES  
1151 PUNCHBOWL STREET, ROOM 330  
HONOLULU, HAWAII 96813

SUZANNE CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT MASUDA  
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AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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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

August 10, 2018

TO: Division of Aquatic Resources File

THROUGH: Suzanne Case, Chairperson

FROM: Maria Carnevale  
Papahānaumokuākea Marine National Monument

**SUBJECT:**

DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAHAANAUMOKUĀKEA MARINE NATIONAL MONUMENT RESEARCH PERMIT TO DR. TIMOTHY GRABROWSKI, UNIVERSITY OF HAWAII, HILO, FOR ACCESS TO STATE WATERS TO CONDUCT SURVEYS OF DEEP CORAL REEFS UNDER PERMIT PMNM-2018-032.

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 Dr. Randall Kosaki, National Oceanic and Atmospheric Administration, Papahānaumokuākea Marine National Monument, for Access to State Waters to Conduct Surveys of Deep Coral Reefs

Permit Number: PMNM-2018-032

Project Description:

The research activities, as described below, would allow entry and activities to occur in Papahānaumokuākea Marine National Monument including the NWHI State waters between August 15, 2018 and August 14, 2019.

Dr. Timothy Grabowski (applicant) proposes to lethally sample of Bluestriped Snapper (ta'ape) *Lutjanus kasmira* in order to provide specimens for an age and growth study throughout its introduced range in the Hawaiian Archipelago. Up to six individuals would conduct proposed activities consisting of swimming, snorkeling, SCUBA diving, and the lethal removal of 10 *L.kasmira* (140 total) from each of the following proposed islands/atolls (marine areas only) and

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August 10, 2018

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seamounts locations including: French Frigate Shoals, Maro Reef, Laysan Island, Lisianski, Pearl and Hermes Atoll, Midway Atoll, Kure Atoll, Brooks Bank, St. Rogatien Bank, Raita Bank, Northampton Seamount, Pioneer Bank, Nero Seamount, and Ladd Seamount. Sampling would be opportunistic and would be conducted by research divers also covered under separately permitted activities (PMNM-2018-001, PMNM-2018-029, PMNM-2018-031). The proposed activities would occur during NOAA's annual reef assessment and monitoring program aboard a research expedition on NOAA Ship HI'IALAKAI (vessel operations separately permitted under permit no. PMNM-2018-001). The research cruise is currently scheduled for August 23, 2018 – September 16, 2018.

All individuals would abide by the following PMNM Best Management Practices (BMPs):

- BMPs for Boat Operations and Diving Activities (BMP # 004)
- General Storage and Transport Protocols for Collected Samples (BMP # 006)
- Marine Wildlife Viewing Guidelines (BMP # 010)
- Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment (BMP # 011)
- Best Practices for Maritime Heritage Sites (BMP #017)

The activities will benefit the conservation and management of the Monument by supporting the Monument Management Plan (MMP) as described in:

Marine Conservation Science Action Plan (MCS) 1: Continue and enhance research, characterization, and monitoring of marine ecosystems for the life of the plan, as appropriate.

Consulted Parties:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai'i Division of Aquatic Resources, Hawai'i 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 July 6, 2018, 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 surveys and collections, 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 monitoring and removal of marine invasive species from mesophotic reef ecosystems, 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 fish collection for marine surveys and research, falling under Exemption Class #5, Exempt Item #15 which allows “aquatic life surveys, inventory studies, new transect lines, photographing, recording, sampling, collection, culture and captive propagation.” (DEPARTMENT OF LAND & NATURAL RESOURCES, EXEMPTION LIST published June 5, 2015).

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 the Applicant, which involves accessing the Monument’s deep coral reefs using technical SCUBA diving technology to document biodiversity. The Applicant received a permit to conduct similar work annually from 2009 thru 2015, and is likely to request future permits to continue this work. No other studies of this type have been undertaken to date. Access to deep coral reefs is limited and bottom times are minimal. 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.

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These activities would be conducted from the NOAA Ship HI'IALAKAI. The ship will be conducting routine operations (PMNM-2018-001) and serving as a research platform for other PMNM Applicants. None of all the other permits that would potentially be active in the Monument concurrently with the proposed activities overlap. Of these proposed permits, none are intended to duplicate the collections and scope of the Applicant's research. The researchers have taken care with their proposals as to not duplicate each other's efforts in a complimentary fashion. The culmination of these permits, and their disparate activities, occurring throughout the Monument, is not anticipated to have significant 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.

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.