

**Papahānaumokuākea Marine National Monument**  
EDUCATION Permit Application

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

**ADDITIONAL IMPORTANT INFORMATION:**

- Any or all of the information within this application may be posted to the Monument website informing the public on projects proposed to occur in the Monument.
- In addition to the permit application, the Applicant must either download the Monument Compliance Information Sheet from the Monument website OR request a hard copy from the Monument Permit Coordinator (contact information below). The Monument Compliance Information Sheet must be submitted to the Monument Permit Coordinator after initial application consultation.
- Issuance of a Monument permit is dependent upon the completion and review of the application and Compliance Information Sheet.

**INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED**

Send Permit Applications to:  
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:** Keolohilani H. Lopes Jr.

**Affiliation:** PMNM/JIMAR

**Permit Category:** Education

**Proposed Activity Dates:** 08/23/2018 – 09/16/2018

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

**Proposed Locations:** Marine areas within all Special Preservation Areas: Kure, Pearl and Hermes, French Frigate Shoals (FFS), Nihoa, Mokumanamana, Maro Reef, Laysan, Lisianski, and Gardner Pinnacles and marine and land areas of Midway Atoll Special Management Area.

**Estimated number of individuals (including Applicant) to be covered under this permit:** 2

**Estimated number of days in the Monument:** 26

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

a.) The proposed activity would...

Create a documentary film that tracks two (2) university students as they pursue their dream of becoming marine scientist. This film will introduce the students beginning in May 2018 at QUEST (UH Hilo field school to teach SCUBA survey methods) and follow them after they have been selected as PMNM interns for this research cruise. Once on the cruise this film intends to highlight all the work that the managing partners are doing in the monument to mitigate the issues that face PMNM. The story will continue with the new interns as they get accustomed to the ship, the research, and the daily routine the expedition requires. Additionally, this film intends to show some of the seasoned veteran divers of the deep reef team, and the other research projects that will be conducted on this cruise. Most video footage for this film will be shot on a handheld video camera, underwater video cameras, and a small unmanned aircraft system (UAS) High Definition video, and a compact sport camera (GoPro) of the various atolls within PMNM (see application to be submitted by Randy Kosaki) on an upcoming NOAA ONMS HA1802 cruise to PMNM (dates 8/23/2018 – 9/16/2018). All video footage will be

opportunistically captured as time, safety, weather, and location will dictate. I am estimating that 75% of the video will be shot with a handheld camera in the ocean (ship, small boat, underwater), 10% Hawaii Island (QUEST), 5% Midway, and ~10% drone footage of all operational site locations. Upon completion of this film I plan to submit it to the Hawaii International Film Festival and the Waimea Ocean Film Festival and no profit will be generated personally by me. This film will become the property of PMNM as it is shot on their gear (except for drone), and I am a salaried employee of PMNM conducting this work primarily on work hours.

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

I will have the video gear with me during the daily operations and be ready to film when I am free from my research duties. My primary responsibility on this research cruise is that of a Technical Diver to survey the deep reef. This task requires a lot of time, however, I will be should be able to capture some footage with the handheld cameras and launch the drone from the small boat (vessel support to be separately permitted) and fly it around areas of interest being careful not to disturb wildlife. Most footage will be taken at low altitude (400' ceiling) and at low speeds (<20 mph), along the shoreline. Our current draft itinerary doesn't take us to the culturally sensitive areas of Nihoa and Mokumanamana and these atolls will only be shot from a distance (>1mi) if our plans change due to weather.

c.) This activity would help the Monument by ...

Creating a high quality documentary targeted for a worldwide audience that will highlight the Monument's natural and cultural resources, partner agencies work in mitigating threats facing PMNM, and the type of research is being conducted.

### **Other information or background:**

I have received the Fish and Wildlife Service (FWS) UAS checklist and I meet all requirements set. I have passed my FAA Part 107 UAS pilot exam and I am currently awaiting my UAS pilot certificate number that I will forward to you when I receive it. The DJI Phantom 4 Pro+ is approved by the FAA and registered under my name with the associated Serial Number of 189CEBLBA20955 and Certification number of FA3934HENF, exp. Date 04/07/2021. I will act as the Pilot In Command (PIC) for all flights, and assign a visual observer (TBD, a simple task that can be assigned to available personnel) at all times to watch the drone for potential obstacles (living and non-living). When on Midway I will have Kalani Quiocho act as a resource monitor when I fly, in addition to a visual observer.

UA Pilot Information. I will have 5 months of experience flying the DJI Phantom 4 Pro+ Unmanned Aircraft (UA). I have passed the FAA Part 107 UAS exam on May 5th and will have all legal documents required by the US government to fly a UAS. I will receive my temporary license in a week or two and then it will be followed up by my permanent card. The instructor said to expect a 7 to 8 week wait for the certification card to arrive in the mail.

UA Specifications - DJI Phantom 4 Pro+ is a small (square diagonal 35cm) weighing 1380 grams. It has a 28 minute flight time per battery pack. The UA also has many intelligent features built in like obstacle avoidance, intelligent flight modes, and auto return, and auto tracking features. This drone will automatically return to the last known home location if it loses contact with the remote control. All of these intelligent features are designed for safety. The noise emitted is nominal.

## **Section A - Applicant Information**

### **1. Applicant**

Name (last, first, middle initial): Lopes Jr., Keolohilani, H.

Title: Mr.

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

Keolohilani H. Lopes Jr.

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

Phone: [REDACTED]

Fax: None

Email: [REDACTED]

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

N/A

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

NOAA Office of National Marine Sanctuaries PMNM

#### **4. Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Teacher; Jane Doe, Videographer):**

Visual Observer TBD (1 per flight): A visual observer will be assigned based on who is on the small boat at the time of flight operations. The only job required by this visual observer is to keep an eye out for potential collisions between the unmanned aircraft and other objects.

**Section B: Project Information**

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

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

**Ocean Based**

NOTE: Shallow water is defined by water less than 100 meters in depth.

Remaining ashore on any island or atoll (with the exception of Sand Island at Midway 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:

All UAS operations will be conducted from the marine environment and capture the shallow water environment up to the high water mark on the shoreline. If the UAS has a catastrophic crash deep inland, I will change into my sterile footwear, and cloths to will adhere to PMNM BMP #007 to eliminate the risk of introduced species during a land recovery of the UAS. In the event of a water crash, I will snorkel to get it. The UAS will not immediately sink so there will be time to drive the boat to it and retrieve it. To avoid disturbing habitat and the animals residing on the atolls all footage will be shot from near the shoreline. I will not venture inland more than the high water line on the shore line.

**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:***

Papahānaumokuākea Marine National Monument is a sacred and isolated region that makes access here virtually impossible for the average person. This film intends to reach a broader public via the Hawaii International Film Festival and perhaps other film festivals. With this attempt to reach a broader audience perhaps more people will get to experience, in some way, the majestic beauty that is PMNM. As a researcher for PMNM I have had the privilege of visiting this place and I feel an obligation to attempt to bring this place to the people through a visually beautiful documentary that is educational. aerial imagery is essential in documentaries to show grandeur, remoteness, beauty, and to gain different perspectives never seen before. Additionally, this documentary film will shed light on the work conducted by NOAA and its managing partners in addressing threats and mitigating them (Sea Level Rise, Marine Debris, etc.)

\*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/angered/>

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?

Prior to launch I will notify all potentially effected personnel (Monk Seal Campers, FWS staff, Air Traffic Control (Midway), Hialakai. In an effort to insure any an all participants being filmed agree to such filming I will have them sign a video release prior to the shooting, describe the shot I want to achieve, and then stage the players accordingly. No one will be filmed without prior knowledge and consent. Standard safeguards for piloting drones will be exercised with additional measures to protect the wildlife and

other resources of the Monument as well as personnel. We will operate in daylight hours only, operating in winds less than 20 mph, have a visual observer (boat coxswain or other crew on the small boat) monitoring the UAV and alerting me to potential obstacles living and non-living. Additionally, I will operate the UAV at low speeds (<20 mph) and low altitudes (<400'). Close-up footage of wildlife will not be shot with the UAV. The UAV will be primarily used for panoramic and shots taking from distances to convey the remoteness of these atolls. Flights will only occur in airspace with a low density of birds flying in the immediate area. The visual observer will also notify me if there are wildlife heading in the direction of the UAV which will trigger an appropriate maneuver to avoid impacting these animals. I will only use vertical launching and recovering from small boats, and always operate the aircraft within visual line of sight. Additional safeguards built in to the Phantom 4 Pro+ is the low battery warning, automated return home button, and collision avoidance to prevent crashes. In the unlikely event of a crash or runaway I will retrieve the UAV. Land crash protocol will include the use of sterile cloths to change into and then get dropped off by the small boat to get in to shore safely. In the case of an ocean crash, I will snorkel to retrieve it. When flying the drone I will always have a path to retrieve it at any point in the operation. In order to protect cultural sites I will get advice from our Native Hawaiian Program Specialist (Kalani Quiocho, he will be on this cruise) and address other potentially sensitive maritime archaeology footage will be screened by Kelly Keogh prior to public release. The priority for a launch will be the safety and protection of both natural and cultural resources of the monument. If the risk is too high, I will not fly the UAV. This UAV footage will add an element of specter and awe to the place in which we work and in no way is it integral to the storyline, however it does add a cinematic effect that can't be duplicated by any other means.

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?

All activity will be observational and no adverse effects on wildlife and nature are anticipated. This documentary project is another opportunity to “bring the place to the people”. Uniquely positioned as a researcher in the monument, I have the capacity to shoot high quality video and get it seen by the public while understanding the regulations, importance, and most of all the sacredness of PMNM. The safety practices described above will insure that no damage to animals and habitat will occur.

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

This activity is designed to furnish high quality video footage of PMNM to produce a documentary on PMNM and increase the quality of outreach products by expanding our library of stock footage. In order to obtain high quality aerial imager of all the islands and atolls in PMNM the activity must be conducted within the Monument.

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

We have a goal of releasing this film at the Hawaii International Film Festival in 2019. We plan to enter this feature film as a “Made in Hawaii” and “Indigenous Filmmaker” category. Smaller video releases may be used on social media platforms. The film festival venue will be a great outlet to gain a wider and different audience. There will be no adverse impacts on any of the Monuments resources. The visual products created by this project will be useful for years to come.

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

The duration of the activity will be limited to the research cruise dates August 23<sup>rd</sup> – Sept 16<sup>th</sup> and therefore no longer than necessary to obtain aerial imagery for a documentary on PMNM.

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

I have been a part of the PMNM research team and have been on 7 expeditions into the Monument since 2010. I have also been into the Monument on a Marine Debris cleanup in 2012 where we removed derelict fishing gear and other plastics for nearly 2 months. This experience has allowed me to conduct research from small boats and inflatable Zodiacs doing all types of activities. Over the years I have become familiar with these atolls and know most of the areas to avoid, as well as the beautiful areas that should be recorded. I am also familiar with the wildlife that resides in the monument and understand that we are guests in their place and I will not disturb the daily routine of these animals. I will have ~5 months (+200 hrs. projected) of flight time and will take my FAA Part 107 exam regarding the flight of unmanned aircraft (UA) on April 25.

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.

I have a berth on the Hiialakai for the upcoming cruise into the Monument (HA1804). All the video equipment has been secured and no other cost will be incurred.

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.

All film footage will be observational. I intend to launch and recover the drone from a small boat and will not disturb the wildlife or any other of the monuments natural resources. Additionally, I will have a visual observer on the boat whose sole job is to insure that the drone will not crash into any hazards, wildlife or habitat. This, in addition to the automated crash avoidance systems, and safe flying (low altitude and low speed) will allow for an extremely safe flying protocol.

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

Access to PMNM and small vessel support will be provided by NOAA Ship HIALAKAI (separately permitted under permit no. PMNM-2018-001). NOAA Ship HIALAKAI has been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031.

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

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

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

I am primarily a researcher with the PMNM dive team that will be conducting separately permitted research activity on deep reef monitoring. I am planning on having my video gear and drone on our small boats during our daily operations and will shoot video by opportunity. If we have time to shoot, weather is nice, and everyone on the team (small boat) is OK to go get some footage I will attempt a flight. Prior to the launch I will practice and discuss with the crew the safety protocols I have described earlier. There will be at least one visual observer and not have an excessive amount of birds in the area I intend to film. If all these conditions are met I will launch the drone from the back deck of the stationary boat. I will operate the drone according to the FAA's Small UAS Rule (14 CFR Part 107) by flying at or below 400 feet and within visual line of sight at all times. In addition, when flying at Kure Atoll I will not land, launch or approach with my UAS within 500 feet of the State Wildlife Sanctuary. I do not intend to operate near or target any protected species. Any footage captured of protected species would be limited to incidental occurrences while filming and capturing imagery of panoramic views. UAS land operations will be limited to Midway Atoll and would follow all directions provided by the FWS Refuge Manager.

Video shots I hope to achieve are panning shots of the atolls from the shoreline no higher than the high tide mark. Shots of the NOAA small boats heading out to the dive sites. Most shots will be "dolly" type shots flying parallel to shore and then panning up and out capturing an aerial shot. I will not fly over land, except for Midway, where we will have a day to film on island. Midway pier site, I plan to get a shot of the ship and the sunrise combining the UAV to a time lapse scene. Additionally, I would like to launch from land to get some beach video footage. I intend to contact FWS biologist and the Air Traffic Control tower prior to operations in order to receive guidelines for UAS flight on the atoll.

**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): None**

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

• Specific site/location:

• 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 be transported out of the Monument?**

N/A

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

N/A

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

N/A

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

We plan on creating a documentary that will focus on the preparations made by all of the science crew for this research cruise (HA1804). It will also track the story of the interns that will participate on this expedition. Second, this video will be informative about the various threats which the Monument faces and the agencies and people involved in the mitigation of such threats. We have an aggressive schedule to produce a final product by November of 2019. This project will also create stock video footage to use in all perpetuity with the hopes to convey the natural beauty of PMNM. Archival video clips of PMNM. I, nor any third party will profit from this project. The video footage will be the property of PMNM as it is shot on their equipment (except for the UAS) and it will be shot primarily during work hours. This film is meant to entertain and educate with no motive to profit from this.

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

DJI Phantom 4 Pro+

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

None

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

None

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

None

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

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Signature

Date

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

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