

**Papahānaumokuākea Marine National Monument**  
NATIVE HAWAIIAN PRACTICES 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:** Kim Kanoē‘ulalani Morishige

**Affiliation:** UH Sea Grant, UH Mānoa, Nā Maka o Papahānaumokuākea

Nā Maka o Papahānaumokuākea (NMP) is a non-profit organization whose mission is to maintain and perpetuate a long-lasting relationship with Papahānaumokuākea (our Hawaiian Archipelago) and through this relationship support the overall health of these islands; culturally, naturally, spiritually, and physically. Founded in 2008, NMP has been developing programs focused on investing in our communities and the next generation to lay a foundation for addressing people to shift our behaviors, our values and our relationships and including people in healing the natural world around us.

Nā Kilo ‘Āina (NKA) is a program, established by NMP and implemented in partnership with the University of Hawai‘i Sea Grant Program and community partners on Hawai‘i Island and Kaua‘i including other resource management partnerships throughout the State. The goal of NKA is to build a community of conscientious observers and watchers that intimately understand the moods and characteristics of place, so they can make well-informed decision and management actions that support productivity and balance within ecosystem health. NKA does this by focusing on community stakeholder activities and experiences that deepen and/or strengthen relationships that influence behaviors and decisions that support a healthy and resilient community of people and place.

NMP has been implementing the NKA project in the past ten years of implementation and experience in working with communities across Hawai‘i on watershed and natural resource monitoring activities that address overall health and wellness of a community. We’ve been working for the past eight years at Kalaemano by establishing a monitoring protocol that integrates qualitative and quantitative data collection to understand the productivity of place (through natural cycles and seasonal changes) and utilizing that understanding to drive discussions on improving management, changing behaviors, and addressing community health. In addition to developing monitoring protocols and driving discussions, we’ve also hosted countless school groups, retreats and workshops from Pre-Kindergarten through Kupuna and have been invited into multiple communities to establish elements of Na Kilo Aina or contribute to discussions and decisions on community health and wellness.

**Permit Category:** Native Hawaiian Practices

**Proposed Activity Dates:** September 3-15, 2018

**Proposed Method of Entry (Vessel/Plane):** Vessel – Makani ‘Olu

**Proposed Locations:** Nihoa

**Estimated number of individuals (including Applicant) to be covered under this permit:**  
15-20

**Estimated number of days in the Monument:** 13

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

a.) The proposed activity would...

The proposed activity aims to implement a cross-disciplinary approach that brings together people committed to understanding Nihoa through multiple disciplines and creating a space for interweaving Native Hawaiian practices, research, education, and conservation and management. The team will focus on sharing experiences on the land and in the ocean to feed a collective discussion about Nihoa from a wide range of perspectives related (but not limited to) the function the cultural sites and indicators of cultural and biological health of terrestrial and marine ecosystems. Other activities include conducting research in intertidal zones to expand on the past eight years of monitoring at Nihoa.

Cultural researchers will also grow relationship and participate in another *kau* or season of Hawaii History through ‘ike maka, or seeing for themselves, these storied places and build their relationships to the North Western Hawaiian Islands based on relationships and histories through the eyes of their kupuna. Activities will also help support a continued relationship between the Native Hawaiian communities and the North Western Hawaiian Islands for current and future generations.

Since 2010, NMP has also been conducting research built on the foundation of Native Hawaiian knowledge systems through a dedicated research initiative known in the past as Pilinakai and currently Nā Kilo ‘Āina (NKA). NKA programs empower the next generation, and support community-based resource management that balances health and wellness through ecological and cultural lenses. NKA implements biocultural monitoring in intertidal ecosystems on the foundation of traditional knowledge systems and integrates quantitative monitoring methods. This collective information creates a platform to engage in conversations about adjusting behaviors to minimize impact on resources. These collaborative community partnerships serve as a pathway to perpetuate ancestral knowledge systems and re-build the way we support the productivity of ‘āina balancing the health of people and place. The process includes monitoring protocol integrating qualitative and quantitative data collection to understand the productivity of place (through natural cycles and seasonal changes) and utilizing that understanding to drive discussions on improving management, changing behavior, and addressing community health.

We've been working for the past nine years at Kalaemano and participate in community monitoring across the Main Hawaiian Islands establishing a process that addresses community health and wellness through traditional relationships based in a contemporary setting. In addition to developing monitoring protocol and driving discussions, we've hosted countless school groups, retreats and workshops from Pre-K through Kūpuna and have been invited into multiple communities to establish elements of NKA or contribute to discussions and decisions on community health and wellness. This journey is a special opportunity to cross collaborate with the activities and partners on PMNM-2018-021 and continue a movement to deepen relationships to these places and conduct culturally-grounded research and management.

Consistent with proclamation 8031, these activities will strengthen cultural and spiritual connections to the Northwestern Hawaiian islands and foster the expansion and perpetuation of Native Hawaiian ecological knowledge and research methodologies. This knowledge may be critical as it is observed by local Hawaii residents that 'opihi and hā'uke'uke stocks are generally diminishing in size and number in the main Hawaiian Islands, therefore more data in this area may help to curb the decline. The continuation of 'opihi data collection, and comprehensive intertidal surveys (including fishes, algae and invertebrates) using Native Hawaiian ecological knowledge and methodologies coupled with Institutional science will help to contribute to the overall health of Papahānaumokuākea.

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

To accomplish this activity, we will:

1. Huli'ia - Utilize a Native Hawaiian observation process known as Huli 'ia, an observational process documenting seasonal changes and shifts across entire landscapes, *ma uka to ma kai* (mountains to oceans).

Huli 'ia is a pathway to empower communities of people and place to build a deeper understanding of the health of our environment and our relationships to it. Rooted in strengthening relationships to place, Huli 'ia is a tool to gather communities around re-evaluating our relationships to our environment and creating a culturally-grounded vision of community-driven management action. By expanding the conversation encompassing the observations of multiple groups that traverse and observe different areas of Nihoa, we will grow our relationships to Nihoa and engage in multi-faceted cultural foundations of research to ultimately understand our role in maintaining reciprocal relationships to the places that feed us spiritually, emotionally, physically, and mentally. We acknowledge that our ancestors built a deep knowledge base of the inter-connectedness of the environment and innovate strategies to balance the needs of their place and people to thrive for generations to come.

The community-driven process identifies correlations between species and/or occurrences as important indicators of species, community, and ecosystem health. Huli 'ia opens a conversation to develop strategies that allow natural cycles to support and guide our management practices, which with the impacts of climate change allows the flexibility needed

to ensure the best times to rest areas or species and/or to harvest areas or species. This is a part of larger movement to support self-determination of Native Hawaiian communities in research and resource management across the Hawaiian Archipelago.

Over the past nine years, NMP has been developing and refining this tool, Huli'ia, based on a traditional Hawaiian worldview to allow a geographic place to guide best practices and identify efficient and effective management strategies that would be most beneficial to the productivity and health of that place. This “new-old” tool was developed on the foundation of the understanding of traditional roles, relationships, responsibilities, and reciprocity people had to place and how decisions are believed to have been made to ensure future generations had the resources and opportunities of their forebears. We use Huli 'ia as a Hawaiian observational process to empower the kilo (observer) within communities to document seasonal changes and shifts across entire landscapes, ma uka to ma kai (mountains to oceans). Huli 'ia records place-specific natural cycles of growth, presence, reproduction and assists in identifying correlations between these occurrences as indicators of ecosystem health. Quantitative monitoring is used to provide research opportunities for students to examine seasonal reproduction, size of reproductive maturity, population size structure, and other data to inform sustainable harvesting practices.

Huli 'ia is a tool that the field team at Kure Atoll have been using to collect their observations, identify dominant relationships between seasonal changes throughout their surrounding environment. This partnership has resulted in the creation of a seasonal calendar as a vessel to build place-based knowledge rooted in Native Hawaiian knowledge systems, highlight indicators of seasonal occurrences, and create 'ōlelo no'eau (Hawaiian proverbs) documenting these relationships.

2. Cultural Use and Subsistence gathering in regards to kilo (observers), holomoana (voyaging), and scouting and accessing *wahi pana* or storied places. to re-establish and strengthen traditional relationships to our 'āina (feeder – sustenance).

Consumption feeds physical, spiritual, and cultural health rooting us in our ancestral ties and customary practices. Consumption allows us to be nurtured and nourished by place and genealogy. Our islands and the resources thriving here are older siblings and customary relationships are based on the reciprocal practice of being fed and cared for by our older siblings while we care for and “feed” them in return. Our activities while on island contribute to caring for place further supporting the traditional relationship of younger siblings caring for an elder. Recording more observations at Nihoa through Huli 'ia and quantitative biological surveys of population densities, sizes, and spawning seasons of 'opihi and hā'uke'uke will guide the way we choose to harvest the permitted species. We will refrain from collecting 'opihi and hā'uke'uke if populations appear too small to sustain collections.

3. Place names and storied places to reclaim landscapes within a cultural context and map

Nihoa through a more traditional venue.

Wahi pana or storied places are celebrations of places our ancestors have inhabited reflecting the relationships they shared with the natural world also referred to as ancestors. These places contain references to place and natural phenomena as well as allusions to spiritual elements present in the landscape that are part of the Native Hawaiian consciousness. Storied places articulate aspects of the land and sea in symbolic forms providing a vehicle to maintain and perpetuate traditional relationships to place and honor the familial role these places have to Native Hawaiians. Wahi pana also provide an oral mapping process done through a traditional venue that is passed down through the generations in voice and memory<sup>1</sup>.

These storied places begin with a place name; a name representing relationships, memories, and genealogy. The practice of naming places has been perpetual throughout generations and is a practice that continues today when old names are forgotten or no longer relevant within the context of time and place. This organic process of observing, connecting, and identifying with our landscapes enables us to relate to place and recognize unique environmental characteristics, memorable interactions and occurrences, or an honored event or person whose name is shared and carried into the future by landmarks and shared spaces.

The Wahi Pana activities of this permit will allow us to spend time in different spaces on island engaging a number of different activities through multiple lenses. As a group we will begin to identify places, bays/coves, points, ravines, etc, giving it a contemporary Hawaiian name that represent a relationship, memory, or genealogy. These collections of 21<sup>st</sup> century Hawaiian names will be compiled along with the story of the name (wahi pana), shared with the larger monument and Hawaiian community capturing Nihoa's landscapes through our contemporary relationships.

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

These activities will help the monument by supporting the monuments mission “to carry out seamless integrated management to ensure ecological integrity and achieve strong, long-term protection and perpetuation of NWHI ecosystems, Native Hawaiian culture, and heritage resources for current and future generations.” Perpetuating Native Hawaii cultural practices through gathering a cross-disciplinary team of people committed to understanding Nihoa through multiple disciplines. This is an opportunity to contribute to the initiatives of the co-management agencies and Native Hawaiian research efforts within PMNM creating a space for interweaving and integrating Native Hawaiian practices, research, education, and conservation and management. The team will focus on sharing experiences on the land and in the ocean to feed a collective discussion about Nihoa from a wide range of perspectives related (but not limited to) the function the cultural sites and indicators of cultural and biological health of terrestrial and

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<sup>1</sup> Language from this section comes from an unpublished document “Aloha Ha’ena Text Pix” by Dr. Carlos Andrade.

marine ecosystems. It also strengthens Native Hawaiian relationships with the environment and reinforces the ties between the Native Hawaiian communities and the Northwestern Hawaiian Islands. This opportunity further advances opportunities for Native Hawaiian communities to understand the responsibility we have in caring for our islands within the monument. These activities will also reinforce cultural (including spiritual) connections to the North Western Hawaiian islands and foster the expansion and perpetuation of Native Hawaiian Ecological knowledge across the Hawaiian Archipelago.

These activities will expand on long-term monitoring of intertidal ecosystems in PMNM. With many resources dedicated to collecting deep-sea and coral reefs, intertidal ecosystems are less understood. However, Intertidal zones in PMNM. conducting intertidal monitoring along the wave-swept shores of Nihoa. Nā Maka o Papahānaumokuākea has partnered with PMNM, OHA, and the ‘Opihi Monitoring Partnership to expand our knowledge of intertidal systems in Papahānaumokuākea. Since 2011, NMP has been a partner in the NOAA Intertidal Research Cruise every year. This is part of a research effort examining intertidal ecosystem health with a direct application to building place-based knowledge, understanding our role in maintaining health and balance of ‘āina, and supporting community-driven management action in the Main Hawaiian Islands. It helps the Monument strengthen its management of cultural resources and ensures the strong participation of Native Hawaiians in the region's long-term protection. By providing opportunities to conduct cultural research, (cultural) researchers will assist in the recovery of important Native Hawaiian marine management practices and support the use of Native Hawaiian traditional ecological knowledge. Additionally, the permitted cultural practitioners and researchers will be key to the development of an eventual cultural access and monitoring plan for the NWHI.

**Other information or background:**

Additionally this project is also supported by the following activities in the Monument Management Plan, (NHCH-2.1, 2.2, 2.3, 2.5, 2.6, 3.4, 4.2, 5.3 and NHCI – 3.1 and 3.2) all of which call for the identification of Native Hawaiian research priorities and access opportunities.

NHCH-2.1: Continue to compile information and conduct new cultural historical research about the NWHI.

NHCH-2.2: Support Native Hawaiian cultural research needs.

NHCH-2.3: Facilitate cultural field research and cultural education opportunities annually.

NHCH-2.5: Incorporate cultural resources information into the Monument Information Management System.

NHCH-2.6: Continue to facilitate Native Hawaiian cultural access.

NHCH-3.4: Identify and integrate Native Hawaiian traditional knowledge and management concepts into Monument management.

NHCH-4.2: Develop and implement specific preservation and access plans, as appropriate, to protect cultural sites at Nihoa and Mokumanamana.

NHCH-5.3: Integrate Native Hawaiian values and cultural information into the Monument permittee education and outreach program.



**known at time of application) here (e.g. John Doe, Diver):**

Pelika Andrade  
 Kanoē‘ulalani Morishige  
 Kanoē Steward  
 Holden Takahashi  
 Makani ‘Olu Crew  
 All personnel covered under PMNM-2018-021

**Section B: Project Information**

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

**Ocean Based**

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

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 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:

Intertidal areas of all islands checked above. Land access will be authorized through PMNM-2018-021

**5b. Check all applicable regulated activities proposed to be conducted in the Monument:**

- x 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
- x Sustenance fishing (Federal waters only, outside of Special Preservation Areas, Ecological Reserves and Special Management Areas)
- x Subsistence fishing (State waters only)
- x 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 central purpose of the expedition is to expand and advance traditional Native Hawaiian knowledge in the field of marine conservation and management and continue to bridge the gap between cultural and Institutional research methodologies. The primary objectives of the cultural expedition are to:

1. General observation of activities in the ocean, on island, and in the sky to gain an understanding of seasonal characteristics of place to be tracked across time and compared with other sites throughout the Hawaiian archipelago (Kure through Hawaii) that are monitored in the same way (Huli'ia).
2. Conducting monitoring and assessment of various zones on the island (focusing on the intertidal zone) as a cultural resource within cultural contexts.
3. Increase the knowledge base pertaining to intertidal ecosystems, including 'opihi / hā'uke'uke / limu abundance, health, and reproductive cycles; and
4. Subsistence gathering to reestablish and strengthen traditional relationships to our 'aina (feeder – sustenance). Consumption feeds physical, spiritual, and cultural health rooting us in our ancestral ties and customary practices. Consumption allows us to be nurtured and nourished by place and genealogy. Our islands and the resources thriving here are older siblings and customary relationships are based on the reciprocal practice of being fed and cared for by our older siblings while we care for and “feed” them in return. Our activities while on island contribute to caring for place further supporting the traditional relationship of younger siblings caring for an elder.

\*Considering the purpose of the proposed activities, do you intend to film / photograph federally protected species?    Yes x    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?

All activities contained in this permit application were permitted over prior years and have demonstrated no impact on Monument cultural, natural and historic resources. All consultations (e.g. Section 106 National Historic Preservation Act) and compliance requirements would be completed prior to departure. The activities would adhere to all rules and regulations established by the Monument including adherence to all quarantine requirements, wildlife viewing guidelines, and entry/exit notification procedures where applicable.

The intertidal monitoring team consists of Native Hawaiian practitioners/cultural researchers on this voyage who are experienced in proper protocol and will help to ensure the entire group enters Papahānaumokuākea with proper intent and that all resources are treated with respect and care. Native Hawaiian protocols, including oli and mele, will be conducted to re-establish an awareness between people and place. It will also serve to reconnect the Northwestern Hawaiian Islands into the Hawaiian consciousness and worldview. This ceremony/protocol is very important because it establishes a sense of respect and reverence for the environment and all things it encompasses. It also supports a cultural interaction between people (younger siblings) and the islands & resources (older siblings) and prepares participants for these spiritual, cultural, and emotional awakenings. These protocol and ceremony are necessary to tap into an elevated state of awareness which will support cultural research and participants' openness to "see" properly.

A pre-trip workshop sharing Huli ‘ia methodologies and Wahi Pana initiatives within PMNM and the MHI will be facilitated by the Nā Maka o Papahānaumokuākea to share with all participants.

The consumption of intertidal resource invertebrates, fishes, and limu will be conducted with adequate safeguards by not taking more than what is needed to allow participants to deepen our relationship to our ancestors and understand our cultural resources through all senses without compromising the integrity and health of the ecosystem. As mentioned earlier, based on eight years of monitoring intertidal ecosystems across the MHI and PMNM including seasonal spawning activity, we understand what sizes are most abundant and when they are spawning. Most times, we do not harvest to the limit of the permitted harvest for all species and we do not harvest a majority of the species on the list. It is culturally important to have a comprehensive list of marine species to harvest to be able to utilize Native Hawaiian knowledge systems, culturally-grounded indicators of resource health, and quantitative measures of population levels of ‘opihi, hā‘uke‘uke, other invertebrates, and algal presence/absence to be able to make informed decisions. Observing Nihoa over time helps identify what is a sustainable level of harvest and whether or not it is appropriate to harvest. We only harvest knowing these resources can be replaced in the future. When harvesting ‘opihi, we will only harvest individuals that are larger than the legal-size limit of 1 ¼ inch as well as to leave larger ‘opihi alone as they are believed to be more fecund. We will also harvest from various places along the shoreline to avoid concentrating harvest pressure in one area. ‘Opihi are also able to reach reproductive maturity at approximately 7 months after settling onto the rocks (Kay & Magruder 1977), thus we are confident that there will be larval recruitment the following year. When harvesting limu, proper practice of cutting the branches off and leaving the holdfast will be utilized to ensure continual growth after it is harvested. We believe that two traditionally harvested and prepared individuals of each invert species (see Quest #9) per person and a total of one “mini snack-sized zip lock bag” approximately 100 grams of limu (see Quest #9) is appropriate to harvest per island.

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?

Per 7a above, all activities (except maternal investment research of ‘opihi and hā‘uke‘uke) obtained in this permit application were permitted over prior years and have previously demonstrated no impact on Monument cultural, natural and historic resources. All consultations (e.g. ESA Section 7) and compliance requirements would be completed prior to departure. All personnel named in this permit are experienced with conducting surveys in the intertidal zone and are aware of the risks associated with working in nearshore areas with high wave action. Activities proposed in this application would have no cumulative effect as the applicant is proposing short (1-3 day) survey days at each island, and no negative effects have resulted from previous years’ surveys within the NWHI.

In addition, this activity is part of the following Monument Management Plan Action Plans:

- NHCH 2.3: Facilitate cultural field research and cultural education opportunities annually;
- NHCH 2.6: Continue to facilitate Native Hawaiian cultural access;
- NHCH-3.1: Assess Monument cultural resource capacity;
- NHCH-3.2: Increase knowledge base of Native Hawaiian values and cultural information through “in-reach” programs for research managers;
- NHCH-4.2: Develop and implement specific preservation and access plans, as appropriate, to protect cultural sites at Nihoa and Mokumanamana;
- NHCH-5.3: Integrate Native Hawaiian values and cultural information into the Monument permittee education and outreach program

Previous permitted intertidal monitoring efforts suggest the take activity is beneficial for the resource. In 2012, the intertidal data was collected for the fourth consecutive year and Dr. Bird and other intertidal monitoring participants have noted changes over time. For example, the high density of recruits recorded in June 2010, didn’t all survive, suggesting that more ‘opihi settled on the shore than the habitat could sustain. In 2010 participants recorded numerous small one month old ‘opihi (300 per m<sup>2</sup>), whereas in 2011, there were less 1.5-year-old ‘opihi (50 per m<sup>2</sup>) ([http://www.Papahānaumokuākea.gov/news/opihi/opihi\\_chris\\_b.html](http://www.Papahānaumokuākea.gov/news/opihi/opihi_chris_b.html)). Similarly, researchers and participants have noted differences in population distribution, for example, in 2012, ‘opihi at Mokumanamana and Nihoa were recorded in the tens of thousands compared to the 3,000 found at La Perouse Pinnacles at FFS ([http://www.Papahānaumokuākea.gov/research/intertidal\\_cruise2013\\_return.html](http://www.Papahānaumokuākea.gov/research/intertidal_cruise2013_return.html)).

Since September of 2011, field crews have been working with Nā Maka o Papahānaumokuākea documenting the seasonal changes on Holanikū through the Huli ‘ia methodology and the Nā Kilo ‘Āina initiative. Though the seasoned Kure crew understood the natural cycles of the environment at Kure prior to Huli ‘ia, the initiative helps Kure crews and restoration gather to discuss and identify the correlating life cycles there and supporting crew members in broadening perspective and strengthening observations.

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.

There is no practicable alternative to conducting the activity within the Monument. There is no other place within the Hawaiian archipelago that can serve as a baseline of abundance for local community-based marine managers due to its remote locale and legal protection status. Because the Northwestern Hawaiian Islands are remotely managed, this area serves as an optimal measure to determine expected abundances-as these cultural researchers are engaged in community-based near shore marine management in the main Hawaiian Islands. A field study was attempted on Kaho’olawe, however, due to fishing pressures and run-off, the study site was determined to be sub-optimal.

The consumption of intertidal inverts and limu can be conducted outside of Papahānaumokuākea, however there is no alternative to consuming an important cultural resource at a place like Papahānaumokuākea because it allows one to connect to a place on a spiritual level which cannot be done by consuming it elsewhere. This is the reason kanaka maoli can connect to the place they live, because they have a deep and intimate connection to their land, their oceans and to their resources. We cannot whole-heartedly connect to Papahānaumokuākea without practicing our culture like we do in other parts of Hawai‘i, this is an extension of our daily lives and make up who we are. We will harvest, prepare, and consume each invert species, two hā‘uke‘uke and five ‘opihi (see Quest #9) per person and a total of one “mini snack-sized zip lock bag” approximately 100 grams of limu per island (see Quest #9).

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

The end value of the activity outweighs any adverse impacts by safeguarding against the loss of opportunity to expand Native Hawaiian knowledge and re-connect kanaka maoli culturally, physically, and spiritually to Papahānaumokuākea. There is a great need to recover traditional Native Hawaiian marine ecosystem management practices, and as such, the Monument provides an unparalleled venue to accomplish this.

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

Thirteen days is the shortest possible duration to conduct intertidal surveys at Nihoa in order to cover more shoreline than has ever been covered before.

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

The applicant, Kim Kanoē‘ulalani Morishige, is qualified to conduct the permit activities as the co-founder of Nā Maka o Papahānaumokuākea (NMP), Nā Kilo ‘Āina (NKA) Program coordinator, and continued commitment to growing community-based monitoring across Hawai‘i. She has participated in intertidal research for the past eight years and is involved in multiple community partnerships to implement monitoring under the NKA programs that NMP hosts throughout the year. As a representative of NMP, she has participated in the past Born and raised in Kapahulu, O‘ahu, she is a Ph.D. candidate in Marine Biology at UH Mānoa and a National Science Foundation Graduate Research Fellow who extends her research into her work with community-based monitoring to provide important information of population health, reproduction, and seasonal changes in intertidal communities. Her research has focused on intertidal community ecology, maternal investment, limu (algae), and reproductive biology of ‘opihi and hā‘uke‘uke. Through her work under NMP, she has worked with communities in Ka‘ūpūlehu, Hā‘ena, Kekaha, and Hāna. She works to build capacity of the tools we have to address ways to take care of ‘āina through our collective understanding built from community

experience and kilo. Her research is focused on hā‘uke‘uke as a model to determine a way to feed from our shorelines with minimal impact and the respect for reciprocal relationships and commitment to ensure productivity for future generations.

Furthermore, the cultural researchers that will perform various research activities are all trained in traditional near-shore marine management, fishery management, traditional weather observations and working in dangerous near-shore, high wave action areas.

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. This access to the island of Nihoa is funded and fully supported by the Office of Hawaiian Affairs.

h. Explain how your methods and procedures are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument cultural, natural and historic resources, qualities, and ecological integrity.

The methods and procedures employed are widely accepted methods for acquiring data in the marine environment by Native Hawaiian marine practitioners and research scientists. The proposed methodology would not require specialized equipment and would also take into full account the fragility of the Monument's resources. We will conduct responsible and ethical practices by refraining from collecting permitted marine species if the population numbers appear too low.

i. Has your vessel been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?  
This access will be onboard SSV Makani ‘Olu, and they will comply with any mobile transceiver requirements.

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

All permits required for access and conducting cultural observations of the marine environment will be obtained. Also, several members from the Native Hawaiian cultural working group have been consulted regarding the activities to be permitted under this application. Similar to all previous Intertidal Cruise's (2011-2016), a presentation will be provided to the working group both before and after the trip.

#### ADDITIONAL FINDINGS FOR PROPOSED NATIVE HAWAIIAN PRACTICES

k. Explain how the activity is non-commercial and will not involve the sale of any organism or material collected.

The activity is non-commercial. The end-value of the activity is informational and is intended to provide local and governmental managers the information critical to the conservation of these cultural resources.

l. Explain how the purpose and intent of the activity is appropriate and deemed necessary by traditional standards in the Native Hawaiian culture (pono), and demonstrate an understanding of, and background in, the traditional practice and its associated values and protocols.

The purpose and intent of the proposed activity is appropriate and pono by traditional standards in the Native Hawaiian culture in that the expedition is centered on enhancing traditional marine resource management skills through careful observation. The ability to increase or maintain productivity of a particular kai (fishery) is integral to maintaining traditional Native Hawaiian knowledge and marine management systems; and is therefore consistent with pono marine stewardship tenets.

m. Explain how the activity benefits the resources of the Northwestern Hawaiian Islands and the Native Hawaiian community.

The proposed activities benefit the resources of the North Western Hawaiian Islands and the Native Hawaiian communities by deepening our understanding of the North Western Hawaiian Islands; naturally, spiritually, culturally, and historically. Our access will contribute to the breath of knowledge previously documented and further build our relationship to our Hawaiian archipelago. Through this deepened understanding, we also build on our cultural/traditional responsibilities to care for these islands through future initiatives and interactions.

The data collected from these field studies will better enable these cultural researchers / practitioners to understand the biological, spiritual and cultural connections between the NWHI and the main Hawaiian Islands. In doing so, researchers will be better equipped to manage their areas in the main Hawaiian Islands from which the Northwestern Hawaiian Islands will ultimately benefit. Outreach & Education opportunities will be offered and presented to the Native Hawaiian communities and students.

n. Explain how the activity supports or advances the perpetuation of traditional knowledge and ancestral connections of Native Hawaiians to the Northwestern Hawaiian Islands.

The group of cultural researcher / practitioners being selected for this expedition possess intricate knowledge of traditional Native Hawaiian marine management practices in the near shore fishery area within their own ahupua'a. Of equal importance, knowledge gained will be utilized to inform local marine management and conservation education within their home communities. Each person will reflect upon traditional foundational concepts such as 'āina momona (bountiful lands), ho'omalū (regulated activities) and kapu (prohibited activities) which are fundamental in traditional Native Hawaiian marine management.

o. Will all Monument resources harvested in the Monument be consumed in the Monument? If not, explain why not.

Yes, under this permit, all of the resources harvested for cultural purposes will be consumed in the monument.

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

Huli ‘ia – We will facilitate regular group discussions to share observations and relationships made throughout our time. One person will be designated to record the group observations on one datasheet. The Huli ‘ia data will be part of a growing repository of holistic observations from multiple perspectives. To complete these activities, cultural practitioner / researchers would require access to nearshore areas (below the splash zone) that contain ‘opihi habitat. Cultural practitioners / researchers would adhere to all Monument requirements while undertaking this project.

Intertidal Monitoring – The cultural research team would make visual assessments of intertidal areas where ‘opihi and ha‘uke‘uke are located. The research team would record substrate type, limu type/density, crustose/turf/macro algae proportions, other species proportions/ratio, clumping of ‘opihi, hā‘uke‘uke, and other intertidal species, presence of natural predators, freshwater input, etc. The team would take wet/dry notes and use digital cameras to record observations (will remain within the BMO distance for any filming or photography of protected species). We will also be collecting vouchers of intertidal limu (algae) as part of a growing herbarium we collected from previous PMNM intertidal research cruises. In order to understand seasonal reproduction of ‘opihi and hā‘uke‘uke, we will dissect 20 ‘opihi and hā‘uke‘uke, record gonad wet weight, and calculate their gonad index (a standard measure of gonad weight relative to body weight). The body of the ‘opihi will be consumed after we extract the gonads. This is part of a long-term study looking at their spawning behavior and comparing it across the Hawaiian Islands. The ‘opihi and hā‘uke‘uke will be measured (length, width, height) and weighed and the gonad will be dissected out and weighed. The gonads will be fixed in 10% buffered formalin solution for and stored for later histological sectioning and identification of sex. The histological analyses will allow us to identify the stage of gonad maturation that provides important information of the state of reproduction during a particular window in time. These are studies that Nā Maka o Papahānaumokuākea and the ‘Opihi Monitoring Partnership are continuing with local communities across the Main Hawaiian Islands.

Sustenance/subsistence fishing and invertebrate collections – Cultural harvesting protocols for intertidal invertebrates, fish (enenu), and limu will be conducted with adequate safeguards by not taking more than what is needed to allow participants to practice their culture but without compromising the ecological integrity and natural resources. Appropriate oli/mele will be conducted prior to arrival and departure on each island to introduce ourselves and our pono intentions as well as to thank each island for their contributions. We believe that two traditionally harvested and prepared individuals of each invert species per person, five

hā‘uke‘uke and ‘opihi (see Quest #9) per person, two he‘e per island, 20 enenu and a total of one “mini snack-sized zip lock bag” approximately 100 grams of limu (see Quest #9) is appropriate to harvest per island. Harvesting will supplement meals and may consist of ‘opihi, hā‘uke‘uke, limu, ‘a‘ama, pipipi, makaloa, he‘e, leho, and pupu ‘awa. ‘Opihi will be gathered by hand using an ‘opihi knife, and we will be mindful to harvest individuals that are larger than the legal-size limit of 1 ¼ inch as well as to leave larger ‘opihi alone as they are believed to be more fecund. We will also harvest from various places along the shoreline to avoid concentrating harvesting within one area. Our cut off is that we will not sample more than 1% of the population at any island, and abundance surveys from previous years indicate that ‘opihi and hā‘uke‘uke populations are well in excess of 4800 individuals per island on Nihoa.

‘Opihi are also able to reach reproductive maturity at approximately 7 months after settling onto the rocks (Kay & Magruder 1977), thus we are confident that there will be larval recruitment the following year. When harvesting limu, proper practice of cutting/ pinching off the branches off and leaving the holdfast will be utilized to ensure continual growth after it is harvested. All other invertebrates will be gathered by hand. All inverts will be consumed raw, except leho, pipipi and pūpū ‘awa which will be boiled then consumed. Limu will be “cured” and prepared to supplement meals. He‘e will be harvested by using a metal rod to attract the he‘e out of its house and then be gathered by hand. We will not harvest he‘e that is under one pound, in accordance to the State of Hawai‘i fishing regulations. The he‘e will either be prepared by either drying or boiling before consumption.

In addition, hook, handline, and trolling methods will be used for sustenance and subsistence fishing while in transit to the island. Also included in subsistence fishing is a request to spearfish nenu/enenu while at anchor in the waters surrounding Nihoa. Subsistence fishing is the tradition and practice of our access. Three prong spears will be the tool to support this tradition and allows the diver to be extra selective in the catch. All safety pre-cautions will be taken to ensure the safety of those who will be spearing the fish. Nihoa is well-known for the large schools of thousands of enenu that live next to the large sea cliffs at Nihoa. Though we are requesting a total of 20 enenu to take from Nihoa, we will continue to observe their populations during our time there that will help to ultimately determine how many we are comfortable taking (even if its well below 20 individuals or none at all). Refer to attached table for list of species.

**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 name:

1. Thin-Shelled Rock Crab
2. Spotted Drupe
3. Black Nerite

4. Open Drupe
5. Helmet Urchin
6. Black-Foot ‘Opihi
7. Yellow-Foot ‘Opihi
8. Day Octopus / Cliff Octopus
9. Humpback Cowry
10. Intermediate Drupe
11. None, Bonnemaisoniaceae Family
12. Sea lettuce, Ulvaceae Family
13. Yellowfin tuna
14. Dolphinfin
15. Wahoo
16. Chub
17. Miscellaneous algae
18. Soldierfish

Scientific name:

1. *Grapsus tenuicrustatus*
2. *Drupa ricina*
3. *Nerita picea*
4. *Thais aperta* (formally *Purpura aperta*)
5. *Colobocentrotus atratus*
6. *Cellana exarata*
7. *Cellana sandwicensis*
8. *Octopus cyanea* / *Octopus oliveri*
9. *Cypraea mauritiana*
10. *Thais intermedia*
11. *Asparagopsis taxiformis* / *Laurencia nidifica*
12. *Ulva lactuca*
13. *Thunnus albacares*
14. *Coryphaena hippurus*
15. *Acanthocybium solandri*
16. *Kyphosus* spp.
17. Miscellaneous algae
18. *Myripristis berndti* and *Myripristis amaena*

Hawaiian name:

1. ‘A‘ama
2. Makaloa
3. Pipipi
4. Pūpū ‘Awa

5. Hā‘uke‘uke
6. Makaiauli
7. ‘Ālinalina
8. He‘e Maui / He‘e Pali
9. Leho ahi
10. Pūpū
11. Limu Kohu / Limu Līpe‘epe‘e
12. Pālahalaha
13. Ahi
14. Mahimahi
15. Ono
16. Enenuē/ nenuē
17. Limu
18. ‘Ū‘ū

# & size of specimens:

1. ‘A‘ama:
  - a. Up to 24 per island/location for a total up to 88
  - b. 3 inches or larger
2. Makaloa
  - a. Up to 24 per island/location for a total up to 88
  - b. ½ inch or larger
3. Pipipi
  - a. Up to 24 per island/location for a total up to 88
  - b. ½ inch or larger
4. Pūpū ‘Awa
  - a. Up to 24 per island/location for a total up to 88
  - b. ½ inch or larger
5. Hā‘uke‘uke
  - a. Up to 50 on Nihoa
  - b. 3cm or larger
6. Makaiauli
  - a. Up to 30 per island/location for a total up to 120
  - b. 1 ¼ inch or larger
7. ‘Ālinalina
  - a. Up to 30 per island/location for a total up to 120
  - b. 1 ¼ inch or larger
8. He‘e Maui / He‘e Pali
  - a. Up to 2 individuals per island/location for a total up to 8
  - b. 1 lb or heavier
9. Leho Ahi
  - a. Up to 24 per island/location for a total up to 88

- b. 2 inches or larger
- 10. Pūpū - Thais
  - a. Up to 24 per island/location for a total up to 88
  - b. 1 inch or larger
- 11. Limu Kohu / Limu līpe‘epe‘e
  - a. Up to 1 small “snack size” ziploc full (approx. 100g)
- 12. Pālahalaha
  - a. Up to 1 small “snack size” ziploc full (approx. 100g)
- 13. Pelagic species (Ahi, Mahimahi, Ono, etc)
  - a. Up to 10 individuals of the species listed while in transit.
- 14. Enenuē/Nenuē
  - a. Up to a total of 20 individuals
- 15. Miscellaneous algae
  - a. 100 pinches
- 16. ‘Ū‘ū
  - a. Up to a total of 20 individuals

Collection location:

Nihoa

Whole Organism  Partial Organism

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

All specimens will be consumed while in PMNM.

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

• General site/location for collections:

NA

• Is it an open or closed system?  Open  Closed

NA

• Is there an outfall?  Yes  No

NA

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

NA

- Will organisms be released?

NA/NO

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

N/A

**11. Describe any fixed or semi-permanent structures or installations, or cultural offerings you plan to leave in the Monument:**

Offerings of pa'akai (salt) and wai (water) may remain in the Monument.

**12. List all specialized gear and materials to be used in the proposed activities:**

Snorkeling gear, transect line, data sheets, 'opihi knives, handline, hook & trolling equipment, fishing spear

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

- 10% buffered formalin

10% buffered formalin solution is a tissue fixing agent that will be stored in plastic screw cap tubes inside of plastic containment containers (5gal buckets). Bouin's fixative is composed of formaldehyde (37-40%), distilled or deionized water, sodium phosphate monobasic, and sodium phosphate dibasic (anhydrous). Waste will be disposed of at the University of Hawai'i at Mānoa.

**14. Describe collaborative activities to share samples, cultural research and/or knowledge gained in the Monument:**

This project and activities will be in partnership with PMNM-2018-021, and any subsistence/sustenance fishing will be in collaboration with activities under that permit. No "double-take" is requested and only enough fish to feed crew for the day, or what is listed in section 9, will be caught. Additionally, any information gathered from this expedition can be made available to managers upon request.

**15a. Will you produce any publications, educational materials or other deliverables?**

Yes  No

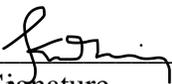
**15b. Provide a time line for write-up and publication of information or production of materials:**

Education and Outreach materials are produced as a result of findings from annual PMNM surveys and other surveys across communities in the populated Hawaiian Islands. One such example is the various Huli'ia posters produced from Huli'ia data collected by communities across the archipelago (including PMNM).

**16. If applicable, list all Applicant's publications directly related to the proposed project:**

Sterling, Eleanor, et al. "Culturally Grounded Indicators of Resilience in Social-Ecological Systems." Environment and Society 8.1 (2017): 63-95.

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

6-14-18  
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