

**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:** Kekuewa Scott T. Kikiloi, Ph.D.

**Affiliation:** University of Hawai'i at Manoa, Center for Hawaiian Studies

**Permit Category:** Native Hawaiian Practices

**Proposed Activity Dates:** June 26th to July 7th

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

**Proposed Locations:** Nihoa and Mokumanamana

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

12 individuals for on-island access for research, with possible 5 staying overnight at a time.

**Estimated number of days in the Monument:** approximately 14 days

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

a.) The proposed activity would...

The proposed activity would further cultural research initiatives that are a priority for the Papahānaumokuākea Marine National Monument by answering specific questions regarding the nature of occupation of the two remote islands of Nihoa and Mokumanamana. The research we are conducting are a continuation of Kikiloi's previous research (2005-2011) that investigates the exploration, colonization, and occupation of these two islands. It also has secondary goals of allowing access to occur for Native Hawaiians that will be helping with this research to: (1) further develop a framework and management strategies for cultural resources in the the Native Hawaiian Plan under the Monument; (2) help to further develop a cultural curriculum component to a monitor training program in collaboration with OHA and USFWS.

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

To accomplish this activity we would need to get approval for this Monument access permit in order to spend approximately 14 days in the Monument traveling to Nihoa and Mokumanamana (6 days transit time to and from) and approximately 4 days on each

island. During the time there we would: (1) return the artifacts and materials collected on previous expeditions for research (Permits # PMNM-2008-041, -041-A1, -041-A2, -042, PMNM-2009-021, PMNM-2011-039; ARPA 09-HWN-01, 11-HWN-001) to their original locations; (2) continue archaeological survey and documentation for the islands cultural resources; and (3) have planning meetings on-site to further develop strategies regarding the Native Hawaiian Plan (in regards to cultural resource management specifically) and develop curriculum ideas for the cultural components of the monitoring program. We are currently in the process of obtaining an Archaeological Resources Protection Act (ARPA) Permit and a National Historic Preservation Act (NHPA) Section 106 Consultation Approval. We sent an email to USFWS to initiate the process on 3/9/11, we are currently drafting Section 106 letters to OHA, PMNM CWG, Hui Malama i Na Kupuna o Hawaii Nei, and SHPD. A copy of both permit documents will be provided to Monument Management once completed.

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

This activity would help the Monument by providing products at the end that will help enhance their understanding of their cultural resources and also result in the production of plans and reports that will help develop long term strategies for cultural protection, preservation, and education and monitoring. We see this effort as a continuation of our past work in the Monument that has helped to renew interest in traditional cultural practices (the voyages of the Hokule'a, Hokualaka'i), protocol, the development of educational curriculum and outreach materials (KCHS, BM, NOWRAMP, Navigating Change), and informed management policy (NWHICRER, PMNM Management Plan, World Heritage).

**Other information or background:**

none

## **Section A - Applicant Information**

### **1. Applicant**

Name (last, first, middle initial): Kikiloi, Scott. T. (Kekuewa)

Title: Assistant Professor, University of Hawaii at Manoa; Principal Investigator and Co-owner Nohopapa Hawai'i

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

Kikiloi, Scott. T. (Kekuewa)

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

Kamakakūoakalani Center for Hawaiian Studies  
University of Hawai'i

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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

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

University of Hawaii at Manoa, Nohopapa Hawai'i.

#### **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, Diver):**

Keola Lindsey (OHA manager)  
Pomaikai Benevedes (PMNM)  
Sean Naleimaile (State DLNR/SHPD)

Umi Kai (Cultural Expert)  
Kelley Uyeoka (Researcher)  
Kaleo Manuel (Planner)  
Kalani Quiocho (Field Technician, TNC)  
Loke Brandt (Field Technician, UHH)  
Koa Matsuoka (Field Technician, UHM)  
Justin Keliipaakaua (Field Technician, UHM)  
Lilia Merrin (Field Technician, UHM)  
USFWS monitor (Anan Raymond requested)  
additional crew of Makani Olu

**Section B: Project Information**

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

<input checked="" type="checkbox"/> Nihoa Island	<input checked="" type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Necker Island (Mokumanamana)	<input checked="" type="checkbox"/> Land-based	<input checked="" 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			

**Ocean Based**

Remaining ashore on any island or atoll (with the exception of Midway & Kure Atolls 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:

Nihoa and Mokumanamana (Necker) are the two most southerly islands of the NWHI. Nihoa (23° 03' N latitude, 161° 56' W longitude) is located 220 km northwest of Kaua'i (Fig 2). The island comprises only 0.70 km<sup>2</sup> of land area, with a length of 1.35 km and a width of 0.45 km (Fig 3). A broad swale extends between Miller's Peak (269 masl) in the northwest and Tanager Peak (256 masl) in the northeast. Virtually all faces of the island are characterized by sheer sea cliffs: 110-256 masl in the north, 10-245 m on the east and west, and 15-30 m on the south. The cliff areas are largely devoid of vegetation, while the south slopes are covered with several varieties of grasses, and several valleys are densely carpeted with shrubs including the edible 'āweoweo (*Chenopodium oahuense*), 'ilima (*Sida fallax*), 'ōhai (*Sebania tometosa*), pōpolo (*Solanum nelsonii*) and stands of endemic loulou palms (*Pritchardia remota*) (Evenhui and Eldredge 2004). The island's surface exhibits a steep southward slope of 23°. Ephemeral streams carved six major south-flowing drainages across the island with three fresh water seeps at the bottom of the stream channels. Groundwater circulates through fissures in the basalt substrate or collects above relatively impervious basalt layers. Minimal sediment is deposited on Nihoa except in the drainages due to steep topography (Bishop 1885 A,B; Clapp and Kridler 1977; Clapp et. al 1977; Emory 1928; Palmer 1927).

Mokumanamana (Necker) (23° 35' N latitude, 164° 42' W longitude) lies northwest of Nihoa and about 510 km. from Kaua'i (Figure 4). The island comprises of about 0.19 km<sup>2</sup> of land that measure about 1370 m. long, by 150 m. wide at its widest point with a

maximum elevation of 82 m. Steep sides define the perimeter of Necker which consists of two parts. Five peaks extend along the east-west island ridge, which extends 1200 m. long and varies in width from 60-80 m. Shallow saddles separate the peaks except for the peak to a gap about 0.5 m. above sea level. The smaller portion of Mokumanamana, the northwest cape, extends about 246 m. northeast from the gap (Clapp and Kridler 1977; Clapp et. al 1977; Emory 1928; Palmer 1927). The island's surface slopes gently to the north. The slopes are sparsely covered with a variety of common coastal plants such as 'āweoweo (*Chenopodium oahuense*), and smaller succulents like ihi (*Portulaca lutea*), 'ākulikuli (*Sesuvium portulacastrum*) (Evenhui and Eldredge 2004). There are twenty four bird species that have been documented on the island. There are no well defined stream channels as rainwater either sinks into the rock or runs off through unorganized channels. One of two small seeps of groundwater occurs about 15 m. above sea level a little to the west of Bowl Cave (Site NK). The second seep is about 10 m. above sea level on the north side of the westernmost saddle of the main island (Bishop 1885 A,B; Clapp and Kridler 1977; Clapp et. al 1977; Emory 1928; Palmer 1927).

**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:***

This proposed research is a continuation of Kikiloi's research (2012) that looked at the dynamics of traditional Polynesia voyaging, exploration, settlement, and interaction in the Hawaiian archipelago as it extends into the remote 'Northwestern Hawaiian islands,' it takes particular focus on the implementation of dry land agricultural food production systems that were first developed in the main Hawaiian Islands were likely later established on Nihoa and Mokumanamana as a means for food security as part of long-term human survival on these remote islands (Apple 1973; Yen 1969). Exactly when and how this happened however is unknown. The absence of necessary resources to sustain life in this region was a major risk factor in voyaging to and from these places (Davies 2009: 78-86). On Nihoa, a majority of open space on the island that was not designated for habitation or ritual purposes was put into food production. Agricultural terraces, retaining walls, and mounds in 9 areas covered approximately 650,000 m<sup>2</sup> (~10% of the land area) of the land area on the island. The rocky loam soil found on the island was enriched with organic material and bird guano. The best areas suitable for agriculture were located on the relatively flat plateau between Miller and Middle Valleys. Marginal sloped areas were heavily terraced with "fish scale" type terraces in an attempt to max out productivity. These terraces helped with soil retention creating more flat areas suitable area for ideal crop growth. On Mokumanamana, there was considerably less soil development and the exposure to bare rock did not provide for the same agricultural potential as Nihoa. Nevertheless, there were at least three areas on Mokumanamana situated in the protected saddle areas that totaled approximately 25 terraces (estimated total area of 7315 m<sup>2</sup>). Soil studies on other major agricultural field system sites in the main Hawaiian islands has shown that dry land cultivation over a duration of time has the ability to leech soils of key nutrients for plant growth (Meyer et. al. 2007). To be sustained, soils must be replenished with essential nutrients either through fertilization or organic amendments (i.e. mulching, composts). On both remote islands however, the numerous seabirds that nest on both island increased both the nutrients and the acidity of the soils due to the overabundance of bird guano. The bird guano is commonly used as fertilizer, but in some cases it can also lead to oxidization and the acidification of the soil (Fox et al. 1991). In extreme cases, the effects of acid soils on agriculture can include nutrient and mineral deficiencies, stunted growth, and limited returns (Uchida and Hue 2000). The relatively thick vegetation and the absence of stress indicators on plants in these fallow production areas suggested that adequate nutrients exist on both islands.

Agricultural development and intensification on these islands has not been able to be evaluated adequately in regards to the timing of the construction of garden terraces and their subsequent use. We have however done a soil nutrient analyses that looked at the measurement of resin-extractable Phosphorus (P), total element pools (C, P, N, cations, and Nb), exchangeable cations, cation exchange capacity, and percent base saturation. Soils were collected from 0 to 30 cm below surface in areas designated as agricultural areas and plots on both island (Kikiloi 2012). Nihoa and Mokumanamana soils appear to have been suitable for agricultural farming because of the nature of their

soils being organic and the addition of the bird guano enrichment. Bird guano may have circumvented the issue of rainfall replenishment and provided a long-term renewable soil fertilizer. Typically, plant crops grow well in organic soils as long as they are not saturated and their nutrients are being replenished. Phosphorous (P) which was drained in other examples of dry land agriculture in the main Hawaiian Islands was sustained here (Kirch 2004; Vitousek et al. 2004). Despite these initial investigations more work needs to be done in understanding of agricultural food production systems on these small marginal and remote islands in regards to the nature of these systems and its relation to mitigating risk in regards to island colonization and long term occupation.

There are three main research questions that will be investigated at Nihoa and Mokumanamana:

1. When were these food production systems established on both islands and for how long were they sustained? Generating chronometric dates to estimate the transfer and establishment of these systems are of high priority, because it helps us to understand the nature of early voyaging and colonization and to what degree these food production systems played a role these continual occupational series that Hawaiian chiefs would have to sponsor in order to keep a constant presence on these islands. The archaeological dates recovered from two test plots on Nihoa in the middle of terraces in Middle Valley (50-Nh-24) and East Valley (50-Nh-55) was dated at  $2\sigma$  showing cal A.D. 1727-1813, and cal A.D. 1735-1805. While these samples date the use of the terraces (and not the construction), they do suggest the relatively late use of these agricultural fields in the A.D. 1725-1800. This interval allows us infer at best that inland construction of these terraced systems began at least a 100 years earlier as est. A.D. 1625-1650. Our research project would attempt to resolve this by excavating small test units in each of agricultural areas on Nihoa and Mokumanamana to retrieve datable material for AMS dating. The results would have implications to understanding how much starches for dietary needs were established for the initial colonization phases for both islands and to what degree food was grown to alleviate the burden of imported resources over time.

2. What was the scale and level of intensification of the agricultural food production systems on both islands? We currently only have a general understanding of the area (size) of land that was dedicated in food production, but there are poor descriptions and maps on the features themselves (Emory 1924; Cleghorn 1988). General maps of the area could be established by creating line features for the complexes of retaining walls on gps, along with detailed descriptions and photographs of the actual architecture and construction. Also, more detailed tape and compass maps could be generated for areas that would be good representative samples of what the system looked like and areas in which samples are obtained from. This would have implications to understanding the amount of energy and investment went into the actual construction of these features over time and determining the level of intensification through observation of subdivisions of crop areas.

3. What level of crop diversity was present in the Nihoa and Mokumanamana food production systems? The introduction of the sweet potato ('uala; Ipomoea batatas), a dry land crop from South America in A.D. 1300 revolutionized dry land agriculture allowing it to expand into progressively marginal areas in the leeward areas of the main Hawaiian Islands. The drought-resistance fast growing potato tuber was far better suited than other dry land crops, such as kalo (taro), uhi (yams), to growing in the arid areas of Hawai'i. During the colonization phase of the Northwestern Hawaiian Islands from approximately A.D. 1400-1550, it was assumed that irrigated wet land systems that were the dominant system of food production in the main Hawaiian Islands helped to subsidize the voyaging and interaction to the Northwestern Hawaiian Islands, a resource deficient environment. By the time the rain fed agricultural systems were developed at A.D. 1500-1600, this system was transferred and applied to Nihoa and Mokumanamana, smaller islands had environments that resemble these dryer leeward coastal areas of the main group. The development of these systems are regarded as signatures of Maui and Hawai'i Island but were present on smaller scales on all of the main Hawaiian Islands. We would address this question by soil samples from the agricultural food production areas and conduct an analysis of plant microfossils (pollen, phytoliths, starch grains, and xylem cells) that would help us to identify and understand the crops and vegetation grown on island over time. The presence or absences and varying concentrations of starch and xylem in samples would allow us to understand which crops were more intensively grown, and determine whether there was a range of diversity in food production or whether it was mono-specific (Horrocks & Barber 2005; Horrocks & Weisler 2006; Horrocks & Rechman 2009).

Finally this work would also help in the monitoring of historical properties- The condition of all sites on Nihoa and Mokumanaman will be recorded during this fieldwork with particular attention paid to the cultural impacts from visitors to the islands and other bioturbations. Our evaluation will contribute to an overall report that will summarize the work done from the short field seasons from 2005-2009 and will be submitted to the USFWS and the PMNM. This will become a resource to help manage the cultural resources effectively and create a baseline for the condition of these sites to help actively monitor them in the future.

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

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?

The proposed research will be compliant with all USFWS biological protocols as it pertains to island access. All gear and clothing will be brand new and frozen for two days. Any vessel selected would be mandated to have the adequate safeguards as to ensure that no invasive species are introduced into the NWHI chain. In terms of cultural protocol, Dr. Kekuewa Kikiloi is a native Hawaiian cultural practitioner and will be doing chants and protocols. As cultural resource manager, we've adopted methods for this research that has the lowest impact possible and enables me to move quickly across the island and effectively record and map utilizing- tape and compass, hand held trimble GPS, preset forms to document attribute information, printed site maps to record areas of disturbance, and now light weight, small sized excavation equipment.

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? Proclamation 8031, which established the NWHI Marine National Monument, "seeks to preserve access for Native Hawaiian practices." With a considerable lack of cultural information concerning the history and practices in this remote area, research initiatives such as the one proposed here should be supported in order to understand the significance of this area to Native Hawaiian people. This research builds upon our previous ethno-historical study, two cultural protocol trips on the Hōkūle'a, four archaeological field seasons on Nihoa and Mokumanamana, a analysis of basalt artifacts from UH and BM using non-destructive EDXRF, WDXRF, and PXRf, AMS dating on carbon materials, soil nutrient analysis of all agricultural sites on both islands (Kikiloi 2012). A large portion of the cultural research initiatives for the NWHI in the past eleven years have had some degree of overlap with this research effort. Ultimately, this has helped serve Monument management needs in a variety of ways.

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 research project is about Nihoa and Mokumanamana and their unique cultural resources and the role those resources play within the broad patterns of Hawaiian pre-contact history. In order to minimize time in the field we have used other data sets (existing archaeological artifact collections already in the Museum and archival records

of the islands' sites). We've also limited our request to make new field collections, utilized non-intrusive methods (no excavations, relative dating methods- seriation techniques), and laboratory analyses of limited impact (non destructive EDXRF sourcing and AMS dating). For this particular research proposal there are no samples that exist in the current collections for us to conduct this analysis on.

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 archaeological and cultural resources on Nihoa and Mokumanamana need to be documented and monitored adequately. Since Cleghorn's 1984 field season, over twenty years ago, there has been limited assessments of the cultural sites on Nihoa and Mokumanamana by qualified archaeologists or cultural resource managers. Field work on Nihoa in 2005-06, and Mokumanamana in 2007-09 by the applicants demonstrated that many of the sites there have been significantly impacted from age and the destabilization of stone masonry foundations by burrowing migratory sea birds. An assessment of the cultural resources of both islands is an ongoing management priority for the Monument.

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

Overall the time durations proposed in this proposal and previous access requests are less than adequate from a research and management perspective for islands that cover 171 acres (Nihoa) and 46 acres (Mokumanamana) respectively, yet we are willing to work within these constraints and to focus on priority data. Most access request are limited by ship's schedules and can be as short as a few days to at most a few weeks. To put this in perspective, everything we know about the cultural resources for both these islands come from less than 2 months of overall field research from 1923-24 Tanager (Emory 1928), 1984 Bishop Museum (Cleghorn 1987), Hunt (1992), and Kikilo (in prep 2009). Projects in Hawai'i that cover this much area and arguably have less significance are often given higher considerations for field time.

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 a doctorate in Anthropology/ Archaeology and am currently a professor in Hawaiian Studies at the University and have conducted research on the Northwestern Hawaiian Islands for the past 13 years. I am licensed to do archaeological work in Hawaii with the State Historic Preservation Division. My dissertation looked at understanding the role these islands played in Hawaiian cosmology, ritual use, and the development of the Hawaiian state religion in precontact times. In the past 13 years I've generated about \$52,000 in funds to support this ongoing research investigation. I have conducted archaeological and cultural research in the area and have publications on the topics. I have accessed the Monument approximately 10 times, and held the position of Native Hawaiian Program Coordinator for NOAA and also served as a volunteer cultural monitor for multiple access for USFWS. I helped run the process that named the Monument and helped with the World Heritage application and provided the

site visit to the islands for the international evaluators. I am currently chair of the PMNM Cultural Working Group and have dedicated much of my life to the protection and well-being of this place. Please see attached CV.

g. Provide information demonstrating that you have adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct. The proposed activity is funded by the Office of Hawaiian Affairs and they have a budget earmarked for this research project for Summer 2015 to cover these costs. We don't anticipate any risks and plan on travelling on a vessel that has a proven track records of safely going to these islands and accomplishing their activities within the framework of the rules and protocols set forth by the Monument.

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.

Throughout all the research accesses I have been on, I (we) have been extremely mindful of having the least amount of impact on the resources of the area. As a result, one component of this trip would be to return the artifacts and materials gathered in previous research trips to their exact locations as agreed upon and to demonstrate our commitment to maintaining the integrity of the place. The proposed activities for this upcoming trip are kept to a minimal number of on-island days and our scheduling would limit the amount of people and also the amount of possible overnight stays to what the Monument feels is appropriate. Our research methods keep a conservation ethic in mind and we will only gather materials that are absolutely needed for data and adopt non-intrusive methods whenever possible. In addition we have saved a berth for a USFWS monitor to attend the trip. We would like to request Anan Raymond for the Oregon USFWS office since he has the most direct experience with cultural resources on both islands.

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

Makani Olu will be outfitted with the mobile transceiver borrowed from NOAA.

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

All necessary permits will be obtained for this research. Through the National Historic Preservation Act Section 106 Consultation- we will be consulting with SHPD, OHA, PNMN Native Hawaiian Cultural Working Group, Hui Malama I Na Kupuna O Hawai'i Nei to ensure that everything is pono (culturally appropriate). We also have a proven track record of being responsible on previous research trips.

#### 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.

This activity only looks to enhance our cultural understanding of Nihoa, Mokumanamana and the the broader Papahānaumokuākea Marine National Monument. The activity will produce materials for use by researchers and Monument managers for outreach purposes. All materials collected will used for research purposes to answer the above questions. All fish caught will be consumed by crew within Monument waters and will help us to connect physically and spiritually to the place.

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. This activity is appropriate and will benefit the place by giving us much needed insight into agriculture methods on both islands and assist us in the understanding of the history of our people there. It allows us to perpetuate cultural practice and continue to utilize and understand the cultural sites located on both islands. I have spent considerable time on both islands in the past, and will share my experiences with other participants. Proper protocols conducted by all participants will be done accordingly.

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 Northwestern Hawaiian Islands and the Native Hawaiian communities by deepening our understanding of the place; naturally, spiritually, culturally, and historically. This access will contribute to the historical information and give insight to how and why people traveled to these places. Through this deepened understanding, we also build on our cultural/traditional responsibilities to care for these islands through future initiatives and interactions.

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 proposed activities support and advance the perpetuation of traditional knowledge and ancestral connections by giving us an understanding of how people lived on these islands and strenghtens our knowledge base of cultural history on Nihoa and Mokumanamana. This research and activities will allow us to continue to understand our past so that we may perpetuate cultural practices into the future.

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

All Monument resources harvested will be consumed in the Monument.

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

Makani Olu will anchor on a sandy area and will remain for duration of activity occuring at each island. All precautions will be made while transferring equipment, supplies and crew to shore.

Archaeological fieldwork will be surveying, describing, mapping, and excavating in agricultural food production areas during the day. These areas for both islands are marked on the island site

maps attached. These areas are places we are returning to because they already have soil nutrient analysis done for them from our previous research . For Nihoa these include five sites - 50-Nh-15, -24, -55, -80, -88. For Mokumanamana, these include three sites- 50-Nk-16, -44,-45. The location of these areas are in all the valley slopes and swales of both islands. We will limit the research to one location in each area to be identified for excavation and it will be described, mapped, and photographed. Excavation for the location will be done in with a small test unit, 1 m x 1m area adjacent or abutting an intact retaining agricultural wall. The test unit will be excavated stratigraphically and taken down one layer at a time and recorded to a sterile layer is reached. A Soil sample of about a gallon bag total from each unit will be taken divided by layer or stratum identified. The profile of the excavation unit looking under the retaining wall will be examined to see if there are any places where datable carbon might be obtained. If carbon is identified, then a sample will be taken from the profile for AMS dating to help us build a chronology for food production on the island. In addition, previously collected surface artifacts from 2005-2011 will be replaced in the same location as they were found during past field expeditions. All of our field work gear is listed on this applications Question 12a.

Camping: In general, we will limit any on-island access and camping to the best practices identified by USFWS in their guiding documents. Camping on Nihoa and Mokumanamana will be in areas designated by the assigned resource monitor. If the monitor needs suggestions based on our previous field experience we will recommend for Nihoa the 50-Nh-20 site as base camp and we will go out to the different areas to work and return back by nightfall to this camp spot; For Mokumanamana we will recommend Flagpole Hill. The camping gear is listed on this application Questions 12a. The only difference between the two islands is that no tents will be used on MM, only bivy sacks and sleeping pads. A bucket toilet and swag bags will be brought and all waste in the buckets (and trash) will be taken off-island when we leave. In addition we will pick up trash from the island as we are doing our fieldwork and add it to our refuse we are taking out.

BMP's 007 and 016 will be followed accordingly, and it is noted that different gear for each islands is needed.

Fishing will be conducted from the Makani Olu by hand line only while traveling to the locations. Hand lines will be set during the day and taken out at night to maximize safety for crew and for marine and avian species at night. If seabirds are attracted to lures, fishing will be suspended until it is safe. No specific fish is being targeted, only pelagic fish. Only enough fish able to feed the crew for the day will be caught. All fish caught will be consumed within Monument waters.

**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:

Scientific name:

Hawaiian name:

# & size of specimens:

Collection location:

Whole Organism  Partial Organism

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

Any soils samples and carbon will likely be destroyed in the process of the analysis. We don't anticipate bringing any other materials back that will require longterm curation. In the past, we've worked with UH Manoa and BM to curate collections but recently UH has downsized their lab and sent all the NWHI the archaeological collections to BM. BM would be willing to store limited materials temporarily if necessary. I am a Cultural Resources Affiliate of the Bishop Museum, the point of contact for BM Anthropology is Dr. Mara Mulrooney her email is [REDACTED]

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

n/a

• General site/location for collections:

• Is it an open or closed system?  Open  Closed

• Is there an outfall?  Yes  No

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

• Will organisms be released?

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

n/a

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

none

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

Fishing gear includes hand lines and lures.

Camping Gear: Tents, Bivy Sacks, Sleeping bags, sleeping pads, Safety Bucket (Sat phone, first aid, water desalination unit), Limited Cooking equipment (Portable Fuel Stove, Fuel, Nested Pots, Can foods), (Small , 6 Gal Water Jugs, Portable Bucket Toilet.

Fieldwork Gear: Trimble handheld GPS, Clipboards (Graph paper, Pencils, Excavation Sheets, Photo Log, etc.) Field compasses, Cameras, Long & Short Tape measures, Trowels, Screens (will look into options of using a metal hand sieve to eliminate lumber use)

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

none

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

There are no other collaborative activities running concurrently to this research project. There will be no remaining collected materials after the analysis. In the past however, we've been open to sharing information and most of the data and analysis have been published (Kikiloi 2012). It should be pointed out however, that currently there is no process or curational agreement between PMNM/USFWS and the Bishop Museum where all the collections are currently stored. I've worked with USFWS to start these discussions some years back now, and believe that all parties could benefit from the establishment of a curational agreement and the development of a process from which researchers could use the collections with consultation and approval. The loan transactions and sharing of materials for analysis is at the sole discretion of the curational facilities, Bishop Museum.

**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:**

The analysis portion will be done within a years time. The write up and report/publication will take another half a year.

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

Kikiloi, K. 2010. Rebirth of an Archipelago: Sustaining a Hawaiian Cultural Identity for People and Homeland. In Hūlili: Multidisciplinary Research on Hawaiian Well-being. Vol. 7 no. 1. pp. 73-115.

Kikiloi, K. 2012. Kūkulu Manamana: Ritual Power and Religious Expansion in Hawai‘i: the Ethno-historical & Archaeological Study of Nihoa & Mokumanamana, Northwestern Hawaiian Islands. A Dissertation for a Doctorate of Philosophy Degree in the Department of Anthropology at the University of Hawai‘i at Mānoa.

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 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