Papahānaumokuākea Marine National Monument

RESEARCH Permit Application

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

ADDITIONAL IMPORTANT INFORMATION:

- Any or all of the information within this application may be posted to the Monument website informing the public on projects proposed to occur in the Monument.

- In addition to the permit application, the Applicant must either download the Monument Compliance Information Sheet from the Monument website OR request a hard copy from the Monument Permit Coordinator (contact information below). The Monument Compliance Information Sheet must be submitted to the Monument Permit Coordinator after initial application consultation.

- Issuance of a Monument permit is dependent upon the completion and review of the application and Compliance Information Sheet.

INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED

Send Permit Applications to:
Papahānaumokuākea Marine National Monument Permit Coordinator
6600 Kalaniana'ole Hwy. # 300
Honolulu, HI 96825
nwhipermit@noaa.gov
PHONE: (808) 397-2660 FAX: (808) 397-2662

SUBMITTAL VIA ELECTRONIC MAIL IS PREFERRED BUT NOT REQUIRED. FOR ADDITIONAL SUBMITTAL INSTRUCTIONS, SEE THE LAST PAGE.

Papahānaumokuākea Marine National Monument
Permit Application Cover Sheet

This Permit Application Cover Sheet is intended to provide summary information and status to the public on permit applications for activities proposed to be conducted in the Papahānaumokuākea Marine National Monument. While a permit application has been received, it has not been fully reviewed nor approved by the Monument Management Board to date. The Monument permit process also ensures that all environmental reviews are conducted prior to the issuance of a Monument permit.

Summary Information

Applicant Name: Daniel Rubinoff
Affiliation: The University of Hawaii

Permit Category: Research
Proposed Activity Dates: Multi-year starting June 1st , 2009
Proposed Method of Entry (Vessel/Plane): either, in coordination with Monument staff
Proposed Locations: All terrestrial locations in the NWHI

Estimated number of individuals (including Applicant) to be covered under this permit: approximately 10 including USFWS and Monument staff who act as assistants to us.
Estimated number of days in the Monument: 14

Description of proposed activities: (complete these sentences):

a.) The proposed activity would…

To sample endemic Hawaiian Hyposmocoma moths from as many NWHI as possible. Preliminary research has revealed endemic species on every emergent NWHI, including Garder Pinnacle

b.) To accomplish this activity we would ….

coordinate with Monument staff to join expeditions and collect samples, or give them simple collecting gear (as in the past) so that they might help us as convenient

c.) This activity would help the Monument by …

developing a list of endmeic species only found in the Monument. These species have likley been isolated for millions of years and represent an important aspect of terrestrial biodiversity in the Monument. Our research will give names, evolutiionary relationships, and ecology for these endemic species allowing for thier appreciation and management.

Other information or background: Please see attached research proposal

Section A - Applicant Information

1. Applicant

Name (last, first, middle initial): Rubinoff, Daniel

Title: Professor

1a. Intended field Principal Investigator (See instructions for more information):
same as above

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

Phone: [redacted]

Fax: [redacted]

Email: [redacted]

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

3. Affiliation (institution/agency/organization directly related to the proposed project):
The University of Hawaii

4. Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Research Diver; Jane Doe, Field Technician):
Patrick Schmitz, William Haines, Jesse Eiben, Michael San Jose all as grad students/ field assistants. USFWS Cindy Rehkemper and other Monument staff when they are available and willing.

Section B: Project Information

5a. Project location(s):

		Ocean Based	
☒ Nihoa Island	☒ Land-based	☐ Shallow water	☐ Deep water
☒ Necker Island (Mokumanamana)	☒ Land-based	☐ Shallow water	☐ Deep water
☒ French Frigate Shoals	☒ Land-based	☐ Shallow water	☐ Deep water
☒ Gardner Pinnacles	☒ Land-based	☐ Shallow water	☐ Deep water
☐ Maro Reef			
☒ Laysan Island	☒ Land-based	☐ Shallow water	☐ Deep water
☒ Lisianski Island, Neva Shoal	☒ Land-based	☐ Shallow water	☐ Deep water
☒ Pearl and Hermes Atoll	☒ Land-based	☐ Shallow water	☐ Deep water
☒ Midway Atoll	☒ Land-based	☐ Shallow water	☐ Deep water
☒ Kure Atoll	☒ Land-based	☐ Shallow water	☐ Deep water
☐ Other			

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

Location Description:
Hyposmocoma species occur in all terrestrial environments across the NWHI, and multiple species are present, or hypothesized for most islands. Nihoa, for example, has four confirmed endemic species and evidence for at least two others.

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:***
Collection of adult and larval moths is essential to conduct species descriptions and DNA analysis of thier evolutionary relationships. Please see attached proposal for more information.

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 activity is very low impact and requires just footraffic to conduct surveys. Over the past three years of research we have had no impacts on the Monument. Our methods remain the same.

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?
Please see attached proposal for a complete explanation. Briefly this research will allow for an appreciation and management of endemic moths which may be important scavengers and herbivores on the NWHI. The data we collect will be an important addition to the natural history and evolution of the NWHI terrestrial fauna.

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.
These species are not only endemic to the Monument, but actual endemic to EACH island within the monument. So discover of new species and thier ecological and evolutionary placement requires working with each of them.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?
There will be no negative impact on the Monument. The number of larvae we collect is never more than a small fraction-less than 10%- of the larvae present due to the limited, low impact collection methods and the abundance of the larvae. The benefits of understanding the biodiversity of the islands is an essential aspect of preserving this biodiversity and fully understanding the ecology of the NWHI.

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.
Because space to reach each island is extremely limited, we rarely have the opportunity to go to more than one island per year, and even then are not able to spend enough time to completely survey that island. Because the species diversity if high and endemic, repeated visits are necessary to slowly build a knowledge-base for Hyposmocoma species. Additionally, different

species may be out at different times of year, so the suite of species present in summer and spring may be completely different. Being able to sample over many years and across all theislands holds the most promise of appreciating this moth diversity. Because transportation is rarely available, we are opportunisitc and coordinate with federal agencies when space is available. This also adds to the amount of time it will take to reach and thoroughly sample even most of the islands.

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.
We have conducted the exact same kinds of surveys on the Main Hawaiian islands over the past 6 years with very positive results. We have coordinated with pre-Monument staff and Monument staff to conduct this research in the NWHI and continued a no-damage and positive results tradition. Please see attached manuscript for an example of species descriptions from earlier NWHI work. Please note that this work is submitted but not published.

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.
We have grant support, as in the past, to support this research. frequently we are just one or two people on a USFWS service boat and the costs for such field work have been relatively low.

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 have had no adverse impact since we simply walk carefully and very slowly through the islands looking for tiny caterpillars. Our procedures are very slow and have never resulted in the unitended damage or death of any Monument resource.

i. Has your vessel has been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?
we will use Monument vessels, as permitted, we will not hire our own.

j. Demonstrate that there are no other factors that would make the issuance of a permit for the activity inappropriate.
Our proposal is to continue ongoing work which has have no negative impact and many positive results for the understanding of the evolution, and natural history of the Monument. Please see attached proposal

8. Procedures/Methods:
Please see attached proposal for a complete detail of all methods. In the Monument, we would simply walk slowly and gather tiny moth caterpillars. We might also put out Blacklight moth traps. These 15 Watt blacklight traps have been used where seabirds are abundant (eg Midway Atoll) and are too small, and weak to attract adult or nestling birds (which were abundant during fieldwork). We have Never had an attraction issue withthese small ultraviolet traps on any non-insect (this includes birds, reptiles and mammals).

NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding, as a customized application will be needed. For more information, contact the Monument office on the first page of this application.

9a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):

Common name:
Hawaiian case-bearing Moths

Scientific name:
Hyposmocoma

& size of specimens:
specimens are generally under 5 mm in length, and we attempt to collect approximately 30 live samples from abundant populations (which can number in the hundreds of thousands)

Collection location:
all terrestrial areas of the NWHI

☒ Whole Organism ☐ Partial Organism

9b. What will be done with the specimens after the project has ended?
They will be stored at the University of Hawaii Insect Museum and the Bishop Museum in perpetuity always available for future research.

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

• General site/location for collections:
The Insect Biodiversity lab at the University of Hawaii.

• 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?
no

• Will organisms be released?
no

10. If applicable, how will the collected samples or specimens be transported out of the Monument?
in tiny plastic vials

11. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:
No one else is working on Hyposmocoma-anywhere. All samples will be preserved and available for future study.

12a. List all specialized gear and materials to be used in this activity:
light bulbs and plastic buckets

12b. List all Hazardous Materials you propose to take to and use within the Monument:
We may take insect killing agents into the monument for the blacklight traps. The quantities and nature of the materials do not pose a risk to humans.

13. Describe any fixed installations and instrumentation proposed to be set in the Monument:
none

14. Provide a time line for sample analysis, data analysis, write-up and publication of information:
We will be writing up results of this research constantly. Thef irst manuscript is attached to this application. As more species are discovered, they will be described. We will also incorporate these species into Archipelago-wide DNA studies to understand the deep-time evolution of NWHI lineages.

15. List all Applicants' publications directly related to the proposed project:
ADD both pubs with NWHI samples AND the NSF proposal

Schmitz, P. and D. Rubinoff. 2008. Three new species of Hyposmocoma (Lepidoptera, Cosmopterigidae) from the Hawaiian Islands, USA based on morphological and molecular evidence. Zootaxa.1821: 49-58.

Rubinoff, D. 2008. Phylogeography and ecology of an endemic radiation of Hawaiian aquatic case-bearing moths (Hyposmocoma: Cosmopterigidae). Philosophical Transactions of the Royal Society of London B 363: 3459-3465.

Rubinoff, D and W. P. Haines. 2006. Hyposmocoma molluscivora Description. Science 311:1377

Rubinoff, D. and W. P. Haines. 2005. Web-spinning caterpillar stalks snails. Science 309:575

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

_____ _____

Signature Date

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

Papahānaumokuākea Marine National Monument Permit Coordinator
6600 Kalaniana'ole Hwy. # 300
Honolulu, HI 96825
FAX: (808) 397-2662

DID YOU INCLUDE THESE?

☒ Applicant CV/Resume/Biography
☒ Intended field Principal Investigator CV/Resume/Biography
☒ Electronic and Hard Copy of Application with Signature
☐ Statement of information you wish to be kept confidential
☐ Material Safety Data Sheets for Hazardous Materials