

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Aquatic  
Resources Honolulu,  
Hawaii 96813

February 23, 2024

Board of Land and  
Natural Resources  
Honolulu, Hawaii

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National Monument Conservation and Management Permit to Mr. James Morioka, Papahānaumokuākea Marine Debris Project (PMDP) for Access to State Waters to Survey and Remove Marine Debris and Disentangle Marine Life as Needed within the Waters of the Northwestern Hawaiian Islands

The Division of Aquatic Resources (DAR) hereby submits a request for your authorization and approval for issuance of a Papahānaumokuākea Marine National Monument Conservation and Management Permit to Mr. James Morioka, Papahānaumokuākea Marine Debris Project (PMDP), pursuant to §187 A-6, Hawaii Revised Statutes (HRS), Chapter 13-60.5, Hawaii Administrative Rules (HAR), and all other applicable laws and regulations.

The Conservation and Management Permit, as described below, would allow entry and activities to occur in Papahānaumokuākea Marine National Monument, including the Northwestern Hawaiian Islands State Marine Refuge and the waters (0-3 nautical miles) surrounding the following sites:

- Lālo (French Frigate Shoals)
- Kamokuokamohoali‘i (Maro Reef)
- Kamole (Laysan Island)
- Kapou (Lisianski Island)
- Manawai (Pearl and Hermes Atoll)
- Kuaihelani (Midway Atoll)
- Hōlanikū (Kure Atoll)

The activities covered under this permit would be authorized to occur via three separate missions, two cruises and one flight. The flight will be to Kuaihelani and back on April 19 and May 3, 2024, with gear traveling to Kuaihelani on M/V Imua February 1-14, 2024 and returning to Honolulu on the M/V Imua May 9-20, 2024. The first cruise will take place between August 3, 2024 and September 1, 2024. The second cruise will take place between September 10, 2024 and October 9, 2024. Expedition dates may vary if unforeseen interruptions or delays occur.

BLNR-ITEM F-1

## INTENDED ACTIVITIES

The proposed permit activities would allow for large scale marine debris survey and removal operations within Papahānaumokuākea Marine National Monument (Monument).

This permit is a renewal of PMNM permits issued in 2022 and 2023 (PMNM 2022-06 and 2023-05). New modifications/activities to 2024 permit application include the following: (1) Adding a third field mission this year, involving a fly-in and fly-out shore-based mission to Kuaihelani to address shoreline marine debris. (2) Incorporating the removal of large debris items such as buoys, derelict small boats, and other material. (3) Conducting surveys of Hawaiian monk seals and sea turtles, encompassing the capture and tagging weaned pups. (4) Utilizing Diver Propulsion Vehicle (DPV) surveys to aid in underwater detection of marine debris, enhancing operational efficiency and increasing marine debris removal. (5) Implementing traditional Native Hawaiian cultural protocols, including ho‘okupu (offering) consisting of ti leaf and occasionally wai (freshwater) and pa‘akai (salt).

The NOAA Northwestern Hawaiian Islands (NWHI) Marine Debris Project (hereinafter referred to as the ‘Project’) began in 1996 and was led by NOAA Fisheries and other agency partners through 2021. The Project has demonstrated over time the necessity of large-scale marine debris removal operations for the protection and safety of marine wildlife, specifically the endangered Hawaiian monk seal and threatened green sea turtle. Between 2015-2021, the Project was co-led and co-managed by James Morioka (Executive Director, Papahānaumokuākea Marine Debris Project (PMDP)), and Kevin O’Brien (President and Founder, PMDP), while still operating under NOAA, prior to the creation of PMDP in 2019. PMDP is proposing to lead the Project in the PMNM indefinitely, after partnering with NOAA, U.S. Fish and Wildlife Services (USFWS), and the State of Hawai‘i Department of Land and Natural Resources (DLNR) on three successful field marine debris removal missions in 2020-2021 (operating under the Co-Trustee permit).

PMDP has independently orchestrated and executed four successful field missions in 2022 and 2023 under its own permit, successfully removing a cumulative weight of 202,950 pounds (101 tons) of marine debris in 2022 and 212,410 pounds (106 tons) in 2023. Looking ahead, PMDP envisions removing over 200,000 pounds (100 tons) of marine debris in 2024.

Specific objectives of the Papahānaumokuākea Marine Debris Project (PMDP) are as follows:

- Surveying for and removing derelict fishing gear (DFG) from shallow coral reef environments (0-30 ft depth) at Lālo (French Frigate Shoals), Kamokuokamohoali‘i (Maro Reef), Manawai (Pearl and Hermes Atoll), Kuaihelani (Midway Atoll), and Hōlanikū (Kure Atoll).
- Surveying for and removing DFG, plastics, and other entanglement hazards from shoreline habitats at Lālo (French Frigate Shoals), Kamole (Laysan Island), Kapou (Lisianski Island), Manawai (Pearl and Hermes Atoll), Kuaihelani (Midway Atoll), and Hōlanikū (Kure Atoll).
- Opportunistically removing large marine debris items such as buoys, derelict small boats,

and other material.

- Evaluating the rates of marine debris accumulation and assessing its abundance and distribution on coral reefs and shorelines.
- Assessing ecological impacts of DFG on coral reef environments through photographic surveys.
- Disentangling protected wildlife, including Hawaiian monk seals, sea turtles, and sea birds, from marine debris when human intervention is necessary or possible.
- Conducting opportunistic surveys of Hawaiian monk seals and sea turtles, including capturing and tagging weaned Hawaiian monk seal pups when appropriate.
- Utilizing small Unmanned Aerial Systems (sUAS) surveys to enhance marine debris detection, thereby increasing operational efficiency, and assessing the abundance and distribution of marine debris on coral reefs and shorelines. Additionally, exploring a potential partnership with the University of Hawaii at Manoa to utilize sUAS surveys for quantifying and characterizing shoreline marine debris in PMNM.
- Utilizing Diver Propulsion Vehicle (DPV) surveys to aid in the detection of marine debris underwater, enhancing operational efficiency, and assessing the abundance and distribution of marine debris on coral reefs.
- Conducting Native Hawaiian cultural protocols to include ho‘okupu (offering) consisting of ti leaf and if permitted, wai (freshwater), pa‘akai (salt), ‘awa (dried Piper methysticum), kalo (taro), or ulu (breadfruit).

PMDP intends to film / photograph protected wildlife (including Hawaiian monk seals, sea turtles, and sea birds) interacting or being affected by the threats of marine debris, while strictly following all PMNM BMPs. All footage (film / photograph) will be provided to the four Co-Trustees (NOAA, U.S. Fish and Wildlife Service, State of Hawai‘i, Office of Hawaii Affairs) upon return from PMNM.

If protected wildlife are entangled in marine debris, PMDP will (if permitted as Co-Investigators on the NOAA National Marine Fisheries Services (NMFS) permits) work with partners at the NOAA Pacific Islands Fisheries Science Center (PIFSC) Protected Species Division (PSD), U.S. Fish and Wildlife Services and the State of Hawai‘i to assess the threat and mitigate hazards to the best of their ability. If seals or turtles become critically entangled, then PMDP personnel (trained with the NOAA NMFS PIFSC PSD) may intervene and prevent potentially fatal outcomes through disentanglement.

PMDP is also proposing to conduct Unmanned Aerial Systems (UAS, commonly referred to as ‘drones’) surveys of derelict fishing nets on coral reefs, using a Splash Drone 4 UAS (back-up UAS is the DJI Mavic Air Pro 2) (if permissible under current regulations). The study was piloted

by the Project in 2018, mapping over 2 sq. km. of coral reef area (stitching hundreds of photographs to create a detailed mosaic) to detect derelict fishing nets on the reefs, and ground-truthing the imagery for nets with divers in the water. The Project demonstrated that the proof of concept for aerial net detection could be successful, and PMDP looks to capture more imagery so that artificial intelligence (AI) detection software used to detect derelict fishing nets on shallow water coral reef environments can be enhanced through machine-learning. As in previous years of the Project, the UAS will be operated by trained and certified staff, and all relevant PMNM BMPs and protocols specific to deployment, retrieval, and operations of the UAS will be followed. The UAS will be deployed and recovered from a small boat. The minimum altitude the UAS will fly over the reef or land is 100 ft and the maximum altitude will be 400 ft. Interactions with birds and other wildlife will be closely monitored and should significant interactions occur, UAS operations will be halted.

### **Purpose and Need**

The proposed activities would be in support of priorities identified in Monument management and recovery plans, included but not limited to: 1) Papahānaumokuākea Marine National Monument (PMNM) Management Plan (hereinafter referred to as the MMP) (specifically 3.3: Reducing Threats to Monument Resources – 3.3.1: Marine Debris (MD) Action Plan – “Reduce the adverse effects of marine debris to PMNM resources and reduce the amount of debris entering the North Pacific Ocean”), 2) Hawai‘i Marine Debris Action Plan (HI- MDAP), 3) Recovery Plan for the Hawaiian Monk Seal, 4) Mai Ka Po Mai: A Guidance Document for Papahānaumokuākea, 5) Endangered Species Act of 1973 (ESA) and 6) Marine Mammal Protection Act of 1972 (MMPA).

The Hawaiian Archipelago (specifically the PMNM) is centrally located within the world’s largest ocean gyre, the North Pacific Gyre and thus becomes a large depository for marine debris. The PMNM, a United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage Site, is home to more than 7,000 marine species, 25% of which are endemic, found only in the Hawaiian Archipelago. Marine debris and derelict fishing gear adversely affect the wildlife and habitats of the PMNM either by directly entangling or harming marine animals (seals, turtles, whales, fish, and invertebrates) or adversely impacting corals via large nets rolling across fragile coral ecosystems. Additionally, there is a serious and growing concern for the entanglement of monk seals, particularly with no formal Project currently led by NOAA.

Papahānaumokuākea is deeply significant in the ancestry of Kānaka Maoli (Native Hawaiian people), representing an extension of their genealogy tracing back to the elemental energies that birthed the Pae ‘āina Hawai‘i (Hawaiian archipelago). Venturing into Papahānaumokuākea means reconnecting with Hawaiian ancestral ties, transitioning from Ao (light, day; the realm of humans) to Pō (dark, night; the realm of the gods). This place, frequented by kūpuna (elders) for thousands of years, holds profound cultural and genealogical significance, as reflected in the Kumulipo, a Hawaiian cosmogonical genealogy chant.

Since 1996, the Project and has conducted large-scale marine debris removals to mitigate the entanglement and ingestion threat to protected wildlife and damage to coral reefs and has successfully removed a total of 1,270 metric tons (2.8 million pounds) of marine debris from PMNM. PMDP supporting 364 metric tons or 802,000 pounds from 2020-2023. The Project and PMDP have also disentangled numerous marine animals. Of the estimated 1,500 remaining

Hawaiian monk seals (which face the highest documented entanglement rate of any pinniped species), approximately 32% are alive today due to marine debris removal efforts, disentanglements, and rehabilitation endeavors (Harting et al., 2014).

### **Methods/Procedures:**

#### In-Water Marine Debris Survey and Removal Operations:

Three methods are utilized for the in-water survey and removal of derelict fishing gear (DFG):

- **Tow-board Surveys:** Tow-board surveys, regularly referred to ‘manta tow’, allows for rapid visual surveys in shallow water (0-30 ft depth) and maximum area coverage. This method requires two divers to use breath-hold techniques while being towed behind a 19-ft inflatable boat at 1-2 knots across fringing, barrier, or back reefs.
- **Swim Surveys:** Swim surveys are primarily utilized within atoll lagoons around reticulated reefs or in areas which are too shallow or intricate to conduct tow-board operations effectively.
- **Diver Propulsion Vehicle (DPV) Surveys:** DPV assisted swim surveys may be utilized within atoll lagoons around reticulated reef areas to cover more reef area per unit of time, allowing for more marine debris to be removed from the environment.

For the methods detailed above, divers conduct surveys until DFG is visually located entangled on the reef. Once located, the net location (latitude and longitude), net characteristic (type, length, width, height, depth, foul level, coral growth) and habitat characterization data are collected. A debris removal decision-tree is then used to determine whether removal of the net is appropriate and will not cause additional damage to the reef. If removal is deemed appropriate, divers cut the DFG free from the substrate while minimizing impact to the entangled coral and surrounding reef habitat. Once the DFG is free from the reef, it is loaded by hand into the inflatable boats for transport back to the ship (and ultimately transported back to Honolulu, HI for proper disposal).

Note: If the nuisance algae, *Chondria tumulosa*, is identified on the marine debris or in the nearby habitat (currently identified at Kuaihelani, Manawai, and Hōlanikū), its specific location within the atoll/island will be marked with a Global Positioning System (GPS) unit, and the marine debris will be left in place (pending further guidance from the MMB). Shoreline marine debris removal operations at islands/atolls with *Chondria tumulosa* will follow the strict Nuisance Algae BMP #020 and Supplemental Biosecurity Plans (attached).

#### Shoreline Marine Debris Survey and Removal Operations:

Shoreline Surveys: PMDP staff will walk the shorelines (between low-tide line and vegetation on shore) of the islands and atolls within PMNM to survey for and remove marine debris. The Project primarily focuses on surveying for and removing entanglement and ingestion hazards to wildlife. Once the marine debris is identified, collected, and staged at a ‘pick-up point’, the 19-ft. inflatable boats approach accessible shorelines to safely load with the marine debris to transport back to the ship (and ultimately transport back to Honolulu, HI for proper disposal).

Aerial Marine Debris Survey Operations:

Unmanned Aerial Systems (UAS) Surveys: UAS surveys are expected to take place at all islands/atolls (if permissible under current regulations) and deployed and retrieved from the inflatable boat. Strict UAS protocols and BMPs will be followed and enforced for aerial survey operations. Flights will take place between 100 ft. minimum (over land or reef) and 400 ft. maximum altitude (if permissible).

Wildlife Disentanglement Operations:

The Project often encounters marine wildlife entangled in marine debris. Marine wildlife in the PMNM are protected and managed by the State and Federal government, and are protected by laws, rules and regulation that prohibit the interaction and intervention with wildlife. If permitted, PMDP staff who are fully qualified, certified, and trained to handle, restrain, and disentangle marine wildlife will assess the situation and report its outcomes to the appropriate office for guidance and next steps.

- **Hawaiian Monk Seal Disentanglement Operations:** Hawaiian monk seals are often entangled in marine debris and require intervention and disentangling to allow for survival. If/when an entangled Hawaiian monk seal is identified, the PMDP staff will notify the NOAA NMFS PIFSC PSD Hawaiian Monk Seal Research Program (HMSRP) of the entangled seal. A full assessment of the seal's health and surrounding habitat will be conducted and relayed to the HMSRP office. James Morioka (Executive Director, PMDP) is a professionally trained Hawaiian monk seal handler (worked for HMSRP 2011-2013) and has helped handle and/or disentangle dozens of seals in the PMNM. In collaboration with PMDP, James Morioka helped handle and disentangle two adult, female, Hawaiian monk seals in 2021. If permitted, James Morioka or other authorized persons on the NOAA NMFS Permit (Permit #22677), would lead a team to handle, restrain, and disentangled the endangered seal through: 1) manual restraint, 2) hoop-net restraint, or 3) stretcher-net restraint protocols and procedures.
- **Marine Turtle Disentanglement Operations:** Marine turtles are often entangled in marine debris, particularly in shallow water coral reef environments. If a turtle is entangled, the team will assess the turtle and its surrounding environment. If permitted, and the disentangling scenario does not cause further risk to the staff and Project, the team will handle the turtle, holding its head above water so that it can breathe effectively, and complete their disentanglement.

Marine Debris Transport and Disposal:

Marine debris collected from within the Papahānaumokuākea Marine National Monument will be managed as follows (for more details, please refer to the Supplemental Biosecurity Plan):

1. All marine debris will be stored in PMDP's specialized marine debris storage bins or placed in super sacks.
2. When derelict fishing nets are stored in PMDP's marine debris storage bins, they will be cut to appropriate sizes in the field. These nets will remain contained in the bins until they

arrive in Honolulu. Upon arrival, the marine debris storage bins will be craned of the ship wholesale and transported directly to either:

- a. H-Power/Covanta Energy through Hawaii's "Waste to Energy" initiative for direct incineration, or
  - b. Hawaii's Department of Transportation "Nets to Roads" initiative, which is facilitated by Hawaii Pacific University's Center for Marine Debris Research.
3. All other marine debris not stored in PMDP's marine debris storage bins, primarily ocean plastics, will be stored in supersacks on the ship's deck until they reach Honolulu. Upon arrival in Honolulu, this debris will be craned off the ship and placed in roll-off containers provided by Schnitzer Steel. These containers will then be transported to HPower/Covanta for incineration and disposal.

PMDP actively seeks innovative, alternative disposal methods for marine debris collected in the PMNM. An educational initiative, the Ocean Plastics Student Makerspace, has been established in collaboration with Le Jardin Academy, a high school located in Kailua, Hawaii. This project involves building small-scale recycling machines to shred, melt, and mold ocean plastics from PMNM into new products designed by students. The products created aim to raise awareness about the size and scale of the marine debris issue in PMNM and actively engage the local community in combating the problem in the Main Hawaiian Islands. While the volume of plastics processed through this method is limited, it's important to note that the Hawai'i Waste to Energy Partnership remains the primary disposal method for the majority of marine debris removed from PMNM.

### **Collection of Specimens**

If the Monument Management Board (MMB) or Chondria Working Group request samples of *Chondria tumulosa* observed and collected in the field (either at established islands/atolls like Pearl and Hermes Atoll or Midway Atoll or newly established/discovered sites) for genetic testing, the specimens will go straight to the University of Hawai'i at Manoa (in collaboration with the University of Charleston) for genetic sampling.

Whirlpack bags and containers for secondary containment will be used for collection and specimens will be preserved in the field (in-situ) as follows, and then transported back to Honolulu using the larger vessel, M/V Imua:

Four samples (4" x 4" x 4" sample, softball size):

1. Freeze (frozen as-is).
2. Salted fresh (salted with table salt as-is).
3. Ethanol (preserved in ethanol as-is).
4. Dried (dried at room temperature in the dark as-is).

ADHERANCE TO FINDINGS CRITERIA, BMPs, AND OTHER SAFETY PROTOCOLS:Monument Management Plan Strategies

The activities proposed by the applicants directly support the Monument Management Plan (PMNM MMP Vol. 1, 2008), including but not limited to the following priority management needs:

- Strategy MD-1: Remove and prevent marine debris throughout the life of the plan:
  - Activity MD-1.1: Continue working with partners to remove marine debris in the Monument and reduce additional debris entering the Monument;
  - Activity MD-1.2: Catalog, secure, contain, and properly remove hazardous materials that wash ashore in the NWHI;
- Strategy MD-2: Investigate the sources, types, and accumulation rates of marine debris within 5 years;
  - Activity MD-2.1: Work with partners on marine debris studies;
  - Activity MD-2.2: Develop and standardize marine debris monitoring protocols for marine and terrestrial habitats;
- Strategy MD-3: Develop outreach materials regarding marine debris within 2 years.
  - Activity MD-3.1: Work with partners to continue to develop and implement an outreach strategy for marine debris.

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

- Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
- Anchoring a vessel
- 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
- Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

Throughout the duration of the Project, NOAA and PMDP have diligently crafted and refined protocols for surveying, mitigating, and removing marine debris, a critical threat to wildlife and vital habitats. While these operations carry the potential for negative impact on cultural and natural resources, NOAA previously conducted a Programmatic Environmental Assessment (PEA or EA) under the National Environmental Policy Act (NEPA), resulting in a Finding of No Significant Impact (FONSI) in June 2005 (valid indefinitely) for the Project. PMDP's operation strictly adheres to all existing NOAA protocols and procedures, ensuring the safe execution of the mission.



To safeguard Monument resources the applicants will abide by all PMNM Best Management Practices (BMPs) while conducting the aforementioned activities within PMNM including but not limited to the following: Marine Alien Species Inspection Standards for Maritime Vessels (PMNM BMP #001), Human Hazards to Seabirds Briefing (PMNM BMP #003), Best Management Practices for Boat Operations and Diving Activities (PMNM BMP #004), Protocol to Reduce Impact to the Laysan Finch (PMNM BMP #005), General Storage and Transport Protocols for Collected Samples (PMNM BMP #006), Best Management Practices for Terrestrial Biosecurity (PMNM BMP #007), Best Practices for Minimizing the Impact of Artificial Light on Sea Turtles (PMNM BMP #009), Marine Wildlife Viewing Guidelines (PMNM BMP #010), Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment (PMNM BMP #011), Precautions for Minimizing Human Impacts on Endangered Land Birds (PMNM BMP #012), Best Management Practices for Maritime Heritage Sites (PMNM BMP #017), Rodent Prevention and Inspection Standards for Permitted Vessels (PMNM BMP #018), Best Management Practices to minimize the spread of nuisance alga (BMP# 20).

For new and particularly sensitive activities, such as addressing a nuisance algal outbreak like *Chondria tumulosa* at Kuaihelani (Midway Atoll), Manawai (Pearl and Hermes Atoll), and Hōlanikū (Kure Atoll), the project will proactively communicate and collaborate with Monument partners, providing clear justification and the necessity for each activity.

PMDP has actively collaborated with the Native Hawaiian community and intends to continue this collaboration indefinitely. Specifically, PMDP has partnered with the Office of Hawaiian Affairs (OHA) and PMNM's Native Hawaiian Program Specialist Kalani Quiocho, to develop a culture-based strategy for the Project. This strategy aims to enhance inclusivity and collaboration with the Native Hawaiian community, facilitating access to the PMNM, creating culture-based outreach materials, and adhering to traditional protocols and procedures while in the field. The following excerpt is included in the PMDP application: *Papahānaumokuākea epitomizes 'āina momona (fat lands, fertile or rich lands). It serves as a tangible example of how the 'āina should abundantly produce resources, holding immense cultural significance. From the perspective of a Kānaka Maoli worldview, understanding these mauka to makai (mountain to sea, land to ocean) connections is vital for indigenous knowledge. The flourishing ecosystems and habitats of Papahānaumokuākea act as a living testament, aiding in comprehending the stories, history, and relationships practiced by kūpuna (ancestors). It provides a living space for Kānaka Maoli to reconnect and expand upon cultural practices. The removal of marine debris becomes a crucial aid to safeguard, perpetuate, and enhance this special place, its ecosystem, and its cultural resources for future generations.*

#### Compliance Information Form (CIS Form) Updates

Note – In previous years a Compliance Information Form (CIS Form) would have been included with BLNR submittal with various pieces of information on project personnel, vessels utilized to access the PMNM, vessel inspection dates and associated vessel details, entry dates into the PMNM, etc. This information is often fluid and changing and updated on a daily basis, and therefore partially complete forms were often included as an attachment for the BLNR meeting in

past years. In 2023 a transition was made to storing this information on a dynamic google spreadsheet; static PDF copies will no longer be included with the BLNR submittal, but the information can be now provided upon request with the most up-to-date data as it is modified up until the departing of the vessel for the PMNM. Some preliminary information for this expedition is as follows – other info can be requested as described above (if necessary):

There will be a total of 23 individuals per cruise. Of the 23 individuals, 16 individuals (berthing limitations) will be from PMDP, and 7 individuals likely from Hawai‘i Resource Group (HRG, M/V Imua) for each of the proposed 30-day missions to the PMNM (August 3 – September 1, 2024 and September 10 – October 9, 2024). There will be a total of 12 PMDP staff for the 15-day land-based mission (April 19-May3, 2024). However, the actual individuals covered by this permit may exceed these totals, if there are staffing changes that occur due to scheduling conflicts between the two proposed missions. Updated data can be provided upon request.

#### REVIEW PROCESS:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai‘i Division of Aquatic Resources, Hawai‘i Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application was posted on the Monument website in the fall of 2023, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument’s Public Notification Policy

#### **MMB Agency Reviewer Questions and Applicant Responses:**

1. Requesting that any nets/debris that are left in place (b/c of the presence of nuisance algae) be consolidated/secured in whatever fashion possible to mitigate any entanglement hazards as best as possible, and to have the location and description of these objects provided to the managing agencies for tracking purposes.
  - a. Yes, we will do our best to minimize entanglement hazards in regards to marine debris found in the presence of nuisance algae. We will mark its location and can provide a description of these objects for tracking purposes.
2. DAR requested PMDP use the same bleaching process as last year (comments attached).
  - a. Yes, PMDP will revert back to 2023’s approved biosecurity protocols for the 2024 marine debris missions at-sea.
3. Per the description of proposed activities on page 5 “Conducting opportunistic surveys of Hawaiian monk seals and sea turtles, including capturing and tagging weaned Hawaiian monk seal pups when appropriate”, will PMDP technicians be trained by NMFS Hawaiian monk seal program staff on handling/tagging of seals and turtles or will J. Morioka be the

sole permitted handler?

- a. All other mention of Hawaiian monk seals in the permit refers to disentanglements. PMDP technicians are tentatively scheduled to train with CIMAR and NMFS in regards to handling/tagging seals and turtles. Currently, we have three personnel on our team qualified to lead Hawaiian monk seal handling and tagging (and have associated Co-investigator letters for Permit #22677).
4. Will collected uUAS footage be made available to partners interested in using the footage for other goals (e.g. monitoring for *Chondria tumulosa*; other future questions)?
    - a. Yes, all UAS footage can be made available to partners interested in the footage.
  5. Will sUAS be flown over islands or solely over water? The permit application only mentions flights over water, but given the project timeline there will be likely active tern colonies on many of the islands which can be susceptible to disturbance by sUAS if not flown at appropriate heights AND speeds.
    - a. sUAS will be flown over islands and over water. Similar to last year, we will deploy our sUAS from the small boats or on shore, and will ensure our flights will be above 100 ft altitude to minimize disturbances to all wildlife.
  6. When bringing nets back to the ship in NAMZ (nuisance algae mitigation zone), the protocol is to secure the small boat to the ship and crane off the marine debris (page 9 ). Bullet point 5 states that “The marine debris is suspended over the water (ocean) to allow for dripping, before being brought onto the deck of the ship over a nuisance algae catchment runway (tarp with raised lips).” If there is the potential presence of a nuisance algae, allowing the net to drip over the ocean might spread the alga to new areas? The permit proceeds to say there is a special tarp, on the vessel to manage containment, so we were further confused as to why they would let the net drip into the ocean prior to loading
    - a. The rationale behind having our nets drip over the ocean was to absolutely minimize the chances of water making it onto the deck of the ship (larger support vessel).The nets are then craned over a “runway” and “catchment area” which are heavily bleached. The runway and catchment area will have lips to prevent wash over. If the RPWG would prefer we do not let the nets drip over the water, that would mitigate some hazards to personnel during craning operations.
  7. What is the procedure if dangerous debris is entangled in/with the other debris? Such as what if munitions, like flares, are tangled in the debris? How is it retrieved from the water/debris? How is it stored, disposed of?
    - a. We have not encountered dangerous debris entangled with other debris in our past. However, if it is, my instinct would tell me to leave it in place, mark its location, and relay the description to all pertinent personnel shore side.

Questions below refer to the Supplemental Biosecurity Plan

1. What constitutes “...surrounding habitat for nuisance algae” when determining removal of a net in a NAMZ?
  - a. The surrounding habitat encompasses the local reef on which the net is ensnared on. This typically covers both ends of an elongated reef, extending several hundred feet outwards, or the entire patch reef. If we happen to encounter nuisance algae during our search or survey of marine debris, it is protocol to mark its location as “nuisance algae zone”; and move on to another operational area (i.e. southwest backreef of Manawai near Seal-Kittery Island).
2. What bleach concentration will be achieved within the marine debris storage bins using bleach pucks for debris collected in NAMZ areas?
  - a. We will reach the same bleach concentration from last year’s protocol. Since we are reverting back to last year’s Biosecurity plan, we do not have intentions of lining the bottom of the containers with bleach pucks.
3. What does “thorough nuisance algae treatment” of empty marine debris bins in Kailua, HI involve?
  - a. Thorough nuisance algae treatment involves sweeping all remaining content (sand, coral rubble, net fragments, etc.) into buckets and treating them with highly concentrated bleach for more than a week. Once all of the content is neutralized or sterilized, the contents are bagged and disposed of appropriately. Following the sweeping of the container, all walls (interior and exterior) are back-pack sprayed with highly concentrated bleach solution more than once, and left to soak. Then, the containers are wiped cleanly at a later date.
4. In areas with known occurrence of the invasive algae *Acanthophora spicifera* at Midway Atoll, (specifically the Rusty Bucket area of Sand Island), Midway will restrict small boat operations along the shoreline and instead suggest that debris collected in this area be transferred by vehicles.
  - a. Understood

## ENVIRONMENTAL COMPLIANCE

NEPA / HEPA: (check-one)

- Categorical Exclusion / Exempt Class: 1 & 5
- EA
- EIS

Other Consultations: (ESA/MMPA Section 7; NHPA Section 106, etc.)

- An informal review of all aforementioned activities following section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA; 16 U.S.C. 1855(b)) was conducted. The outcome of this review may have required the applicant to adhere to other NMFS-prescribed conditions; such conditions would be reflected in the PMNM permit, prior to issuance.
- The proposed activities are covered under PMNM’s programmatic ESA Section 7 informal consultation with National Marine Fisheries Service (NMFS). The outcome of this consultation may have required the applicant to adhere to other NMFS-prescribed conditions; such conditions would be reflected in the PMNM permit, prior to issuance.

The Department has made an exemption determination for this permit in accordance with Chapter 343, HRS, and Chapter 11-200.1, HAR. See Attachment (“DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200.1 HAR, FOR A PAPAĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT CONSERVATION AND MANAGEMENT PERMIT TO MR. JAMES MORIOKA, PAPAĀNAUMOKUĀKEA MARINE DEBRIS PROJECT (PMDP) FOR ACCESS TO STATE WATERS TO SURVEY AND REMOVE MARINE DEBRIS AND DISENTANGLE MARINE LIFE AS NEEDED WITHIN THE WATERS OF THE NORTHWESTERN HAWAIIAN ISLANDS UNDER PERMIT PMNM-2024-003”)

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

If so, please summarize past permits:

Conservation and Management Permits (marine debris removal): PMNM 2022-06, 2023-05

Have there been any a) violations:                                  Yes                   No

b) Late/incomplete post-activity reports:                  Yes                   No

Are there any other relevant concerns from previous permits?    Yes                   No

STAFF OPINION:

DAR staff is of the opinion that Applicant has properly demonstrated valid justifications for their application and should be allowed to enter the NWHI State waters and to conduct the activities therein as specified in the application with certain special instructions and conditions, which are in addition to the Papahānaumokuākea Marine National Monument Conservation and Management General Conditions. All suggested special conditions have been vetted through the

legal counsel of the Co-Trustee agencies (see Recommendation section).

#### MONUMENT MANAGEMENT BOARD OPINION:

The MMB is of the opinion that the Applicant has met the findings of Presidential Proclamation 8031 and this activity may be conducted subject to completion of all compliance requirements. The MMB concurs with the special conditions recommended by NOAA, USFWS, ONMS, DAR, DOFAW and OHA staff.

#### RECOMMENDATION:

Based on the attached proposed declaration of exemption prepared by the department after consultation with and advice of those having jurisdiction and expertise for the proposed permit actions:

1. That the Board declare that the actions which are anticipated to be undertaken under this permit will have little or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment.
2. Upon the finding and adoption of the department's analysis by the Board, that the Board review and accept the declaration of exemption for purposes of recordkeeping requirements of chapter 343, HRS, and chapter 11-200.1, HAR.
3. That the Board authorize and approve a Conservation and Management Permit to Mr. James Morioka, Papahānaumokuākea Marine Debris Project, for Access to State Waters to survey and remove marine debris and disentangle marine wildlife as needed within the waters of the Northwestern Hawaiian Islands, with the following special conditions:
  - a. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.
  - b. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.
  - c. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocols as well as BMPs and the final version of a Supplemental Chondria Biosecurity Plan (included as an attachment) that was approved by the Division of Aquatic Resources (DAR) and the Monument Management Board (MMB)
  - d. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.

- e. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State Marine Refuge.
- f. If there is any Hawaiian monk seal or any other protected species in the area when performing any permitted activity shall cease until the animal(s) depart the area, except as permitted for specific management of that species.
- g. No fishing is allowed in State Waters except as authorized under State law for subsistence, traditional and customary Native Hawaiian practices.
- h. The permittee is required to follow all applicable Federal, State, and County laws with respect to the COVID-19 emergency response that apply at the time of departure and return. In issuance of this permit, the State of Hawaii is not otherwise monitoring or regulating permittee's compliance with COVID-19 laws and is not responsible for the health and safety of crew members, researchers or other occupants of the vessel associated with this permit.

Respectfully submitted,



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Brian J. Neilson, Administrator  
Division of Aquatic Resources

APPROVED FOR SUBMITTAL



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Dawn N. S. Chang, Chairperson  
Board of Land and Natural Resources

Attachments:

- 1) PMNM Application
- 2) PMDP 2024 Supplemental Chondria Biosecurity Plan
- 3) PMDP 2023 Supplemental Chondria Biosecurity Plan (for reference)
- 4) Declaration of Exemption ("DE") from the Preparation of an Environmental Assessment under the Authority of Chapter 343, HRS & Chapter 11-200.1 HAR

Papahānaumokuākea Marine National Monument  
Permit Application – Conservation and Management  
OMB Control # 0648-0548  
Page 1 of 36

**Papahānaumokuākea Marine National Monument**  
CONSERVATION AND MANAGEMENT Permit Application

Updated: 11/3/2023

***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:** James Motoharu Morioka

**Affiliation:** Papahānaumokuākea Marine Debris Project (PMDP) – U.S. 501(c)(3) non-profit organization

**Permit Category:** Conservation and Management

**Proposed Activity Dates:** March 1 – October 30, 2024

- PMDP-2024-01 (2024 Mission #1) – Shore-based mission at Kuaihelani (Midway Atoll)
  - Tentative Dates: **April 19 – May 3, 2024**
    - Flight from Honolulu to Kuaihelani: TBD Chartered Flight April 19, 2024
    - Flight from Kuaihelani to Honolulu: TBD Chartered Flight May 3, 2024
  - Gear Transport from Honolulu to Kuaihelani: M/V Imua February 1-14, 2024
    - Gear delivered to Kuaihelani ~February 7, 2024
  - Gear Transport from Kuaihelani to Honolulu: M/V Imua May 9-20, 2024
    - Gear picked up from Kuaihelani ~May 14, 2024
- PMDP-2024-02 (2024 Mission #2) – Ship-based mission at all islands and atolls of Papahānaumokuākea
  - Tentative Dates: **August 3 – September 1, 2024**
    - Departure from Honolulu: M/V Imua August 3, 2024
    - Arrival in Honolulu: M/V Imua September 1, 2024
    - Gear Loading in Honolulu: August 2, 2024
    - Gear Offloading in Honolulu: September 3, 2024
- PMDP-2024-03 (2024 Mission #3) – Ship-based mission at all islands and atolls of Papahānaumokuākea
  - Tentative Dates: **September 10 – October 9, 2024**
    - Departure from Honolulu: M/V Imua September 10, 2024
    - Arrival in Honolulu: M/V Imua October 9, 2024
    - Gear Loading in Honolulu: September 9, 2024
    - Gear Offloading in Honolulu: October 10, 2024

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

- PMDP-2024-01: Chartered Plane (TBD)
- PMDP-2024-02: Chartered Vessel (M/V Imua)
- PMDP-2024-03: Chartered Vessel (M/V Imua)

**Proposed Locations:** Marine debris survey and removal efforts will occur across the following islands and atolls in the Northwestern Hawaiian Islands in the Papahānaumokuākea Marine National Monument (listed in order from east to west):

- Lālo (French Frigate Shoals)
- Kamokuokamohoali'i (Maro Reef)
- Kamole (Laysan Island)
- Kapou (Lisianski Island)
- Manawai (Pearl and Hermes Atoll)
- Kuaihelani (Midway Atoll)
- Hōlanikū (Kure Atoll).

Hereinafter all islands and atolls will be referred to by their Hawaiian names.

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

- PMDP-2024-01: 12 PMDP staff
- PMDP-2024-02: 16 PMDP staff and 7 M/V Imua staff
- PMDP-2024-03: 16 PMDP staff and 7 M/V Imua staff

**Estimated number of days in the Monument: 75**

- PMDP-2024-01: 15 days
- PMDP-2024-02: 30 days
- PMDP-2024-03: 30 days

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

**a.) The proposed activity would...**

“allow for large-scale marine debris survey and removal operations to occur in the Monument in support of priorities identified in Monument management and recovery plans, included but not limited to: 1) [Papahānaumokuākea Marine National Monument \(PMNM\) Management Plan](#) (hereinafter referred to as the MMP) (specifically 3.3: Reducing Threats to Monument Resources – 3.3.1: Marine Debris (MD) Action Plan – “Reduce the adverse effects of marine debris to PMNM resources and reduce the amount of debris entering the North Pacific Ocean”), 2) [Hawai'i Marine Debris Action Plan \(HI-MDAP\)](#), 3) [Recovery Plan for the Hawaiian Monk Seal](#), 4)

[Mai Ka Po Mai: A Guidance Document for Papahānaumokuākea](#), 5) [Endangered Species Act of 1973 \(ESA\)](#) and the 6) [Marine Mammal Protection Act of 1972 \(MMPA\)](#).”

The NOAA Northwestern Hawaiian Islands (NWHI) Marine Debris Project, henceforth referred to as the ‘Project’, commenced its operations in 1996 and was spearheaded by NOAA Fisheries in collaboration with various partner agencies until the year 2021. Over the years, the Project has underscored the imperative of conducting large-scale marine debris removal initiatives to safeguard marine wildlife, notably the endangered Hawaiian monk seal, threatened green sea turtle, and other marine species.

Between 2015-2021, James Morioka (Executive Director, Papahānaumokuākea Marine Debris Project (PMDP)) and Kevin O’Brien (President and Founder, PMDP) jointly directed and managed the Project. This was prior to the establishment of PMDP in 2019. PMDP now leads the Project in the PMNN, following successful collaborative missions with NOAA, U.S. Fish and Wildlife Services (USFWS) and the State of Hawai‘i Department of Land and Natural Resources (DLNR) in 2020-2021. Subsequently, PMDP has independently orchestrated and executed four successful field missions in 2022 and 2023, successfully removing a cumulative weight of 202,950 pounds (101 tons) of marine debris in 2022 and 212,410 pounds (106 tons) in 2023. Looking ahead, PMDP envisions removing over 200,000 pounds (100 tons) of marine debris in 2024.

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

The Papahānaumokuākea Marine Debris Project (PMDP) will concentrate its efforts on achieving the following objectives:

- Surveying for and removing derelict fishing gear (DFG) from shallow coral reef environments (0-30 ft depth) at Lālo (French Frigate Shoals), Kamokuokamohoali‘i (Maro Reef), Manawai (Pearl and Hermes Atoll), Kuaihelani (Midway Atoll), and Hōlanikū (Kure Atoll).
- Surveying for and removing DFG, plastics, and other entanglement hazards from shoreline habitats at Lālo (French Frigate Shoals), Kamole (Laysan Island), Kapou (Lisianski Island), Manawai (Pearl and Hermes Atoll), Kuaihelani (Midway Atoll), and Hōlanikū (Kure Atoll).
- Opportunistically removing large marine debris items such as buoys, derelict small boats, and other material.
- Evaluating the rates of marine debris accumulation and assessing its abundance and distribution on coral reefs and shorelines.
- Assessing ecological impacts of DFG on coral reef environments through photographic surveys.
- Disentangling protected wildlife, including Hawaiian monk seals, sea turtles, and sea birds, from marine debris when human intervention is necessary or possible.

- Conducting opportunistic surveys of Hawaiian monk seals and sea turtles, including capturing and tagging weaned Hawaiian monk seal pups when appropriate.
- Utilizing small Unmanned Aerial Systems (sUAS) surveys to enhance marine debris detection, thereby increasing operational efficiency, and assessing the abundance and distribution of marine debris on coral reefs and shorelines. Additionally, exploring a potential partnership with the University of Hawaii at Manoa to utilize sUAS surveys for quantifying and characterizing shoreline marine debris in PMNM.
- Utilizing Diver Propulsion Vehicle (DPV) surveys to aid in the detection of marine debris underwater, enhancing operational efficiency, and assessing the abundance and distribution of marine debris on coral reefs.
- Conducting Native Hawaiian cultural protocols to include ho'okupu (offering) consisting of ti leaf and if permitted, wai (freshwater), pa'akai (salt), 'awa (dried Piper methysticum), kalo (taro), or ulu (breadfruit).

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

“supporting priorities identified in Monument management and recovery plans, included but not limited to: 1) [Papahānaumokuākea Marine National Monument \(PMNM\) Management Plan](#), 2) [Hawai'i Marine Debris Action Plan \(HI-MDAP\)](#), 3) [Recovery Plan for the Hawaiian Monk Seal](#), 4) [Mai Ka Po Mai: A Guidance Document for Papahānaumokuākea](#), 5) [Endangered Species Act of 1973 \(ESA\)](#) and the 6) [Marine Mammal Protection Act of 1972 \(MMPA\)](#).”

**1. Papahānaumokuākea Marine National Monument (PMNM) Management Plan (MMP) (Link HERE)**

Led by Monument Management Board (MMB)

Volume 1: December 2008

**3.1: Understanding and Interpreting the NWHI.**

- 3.3.1: Marine Conservation Science Action Plan.
  - Strategy Marine Conservation Science (MCS)-1: Continue and enhance research, characterization and monitoring of marine ecosystems for the life of the plan, as appropriate.
    - Activity MCS-1.1: Continue to characterize type and spatial distributions of shallow-water marine habitats to inform protection and management efforts.
    - MCS-1.2: Continue monitoring of shallow-water coral reef ecosystems to protect ecological integrity.
  - MCS-2: Assess and prioritize research and monitoring activities over the life of the plan.

- Theme of Natural Resources Science Plan (NRSP): Research on human impacts (marine debris).
- MCS-3: Communicate results of research and monitoring over the life of the plan.
  - MCS-3.3: Include an educational component in marine research expeditions.
  - MCS-3.4: Use materials gathered and created through research to develop or enhance education and outreach products.
- 3.1.2: Native Hawaiian Culture and History (NHCH) Action Plan.
  - NHCH-2: Conduct, support, and facilitate Native Hawaiian cultural access and research of the NWHI over the life of the plan.
    - NHCH-2.3: Facilitate cultural field research and cultural education opportunities annually.
    - NHCH-2.6: Continue to facilitate Native Hawaiian cultural access.
  - NHCH-3: Increase cultural resource management capacity across MMB agencies over the life of the plan.
    - NHCH-3.2: Engage Native Hawaiian practitioners and cultural experts and the Native Hawaiian Cultural Working Group in the development and implementation of the Monument’s management activities.
    - NHCH-3.4: Identify and integrate Native Hawaiian traditional knowledge and management concepts into Monument management.
  - NHCH-5: Provide cultural outreach and educational opportunities to serve the Native Hawaiian community and the general public over the life of the plan.
    - NHCH-5.1: Integrate Native Hawaiian values and cultural information into general outreach and education programs.
    - NHCH-5.2: Develop a culturally based strategy for education and outreach within the Native Hawaiian community.

### 3.2: Conserving Wildlife and Habitats.

- 3.2.1: Threatened and Endangered Species (TES) Action Plan.
  - TES-1: Support activities that advance recovery of the Hawaiian monk seal for the life of the plan.
    - TES-1.1: Support marine debris removal activities to promote recovery.
    - TES-1.3: Conserve Hawaiian monk seal habitat.
    - TES-1.5: Support outreach and education on Hawaiian monk seals.
  - TES-2: Determine the status of cetacean populations and verify and manage potential threats over the life of the plan.
    - TES-2.3: Monitor, characterize, and address the effects of marine debris on cetaceans in the Monument.

- TES-3: Ensure that nesting populations of green turtles at source beaches are stable or increasing over the life of the plan.
  - TES-3.2: Protect and manage nesting and basking habitat.
  - TES-3.3: Protect and manage marine habitat, including foraging areas and migration routes.
- 3.2.2: Migratory Birds (MB) Action Plan.
  - MB-2: Minimize the impacts of threats to migratory birds such as habitat destruction by invasive species, disease, contaminants (including oil), and fisheries interactions for the life of the plan.
    - MB-2.5: Work with partners to reduce the impact of commercial and sport fisheries outside the Monument on migratory bird populations.
- 3.2.3: Habitat Management and Conservation (HMC) Action Plan.
  - HMC-1: Within 15 years, develop and implement a strategy for restoring the health and biological diversity of the shallow reefs and shoals where anthropogenic disturbances are known to have changed the ecosystem, using best available information about pre-disturbance conditions.
    - HMC-1.1: Identify and prioritize restoration needs in shallow water reef habitats impacted by anthropogenic disturbances within 5 years.

### 3.3: Reducing Threats to Monument Resources.

- 3.3.1: Marine Debris (MD) Action Plan.
  - MD-1: Remove and prevent marine debris throughout the life of the plan.
    - MD-1.1: Continue working with partners to remove marine debris in the Monument and reduce additional debris entering the Monument.
    - MD-1.2: Catalog, secure, contain, and properly remove hazardous materials that wash ashore in the NWHI.
    - MD-1.3: Develop and implement a 5-year marine debris removal and prevention strategy for the Monument.
  - MD-2: Investigate the sources, types, and accumulation rates of marine debris within 5 years.
    - MD-2.1: Work with partners on marine debris studies.
    - MD-2.2: Develop and standardize marine debris monitoring protocols for marine and terrestrial habitats.
  - MD-3: Develop outreach materials regarding marine debris within 2 years.
    - MD-3.1: Work with partners to continue to develop and implement an outreach strategy for marine debris.
- 3.3.2: Alien Species (AS) Action Plan (specifically for ‘nuisance’ algae, *Chondria tumulosa* at Manawai, Kuaihelani, and Hōlanikū).

- AS-1: Conduct planning to prioritize by threat level, invasiveness, and practicality of eradication or control all nonnative organisms in the Monument over the life of the plan.
  - AS-1.1: Complete an Integrated Alien Species Management Plan (IASMP).
  - AS-1.2: Develop best management practices to prevent, control, and eradicate alien species.
- AS-2: Engage in active surveillance to monitor existing infestations and to detect new infestations of alien species over the life of the plan.
  - AS-2.1: Survey distributions and populations of known alien species at regular intervals.
  - Develop and implement monitoring protocols for early detection and characterization of new infestations.
- AS-3: Establish and enforce quarantine procedures appropriate for each site and habitat (terrestrial and aquatic) in the Monument to prevent the invasion or reinfestation of nonindigenous species over the life of the plan.
  - AS-3.1: Enforce the use of existing quarantine protocols to prevent the introduction of invasive terrestrial species to the Monument.
- AS-8: Conduct and facilitate research designed to answer questions regarding invasive species detection, effects on ecosystems, and alien species prevention, control, and eradication over the life of the plan.
  - AS-8.1: Support and conduct research on alien species detection and the effects of invasive species on native ecosystems.
  - AS-8.2: Support and conduct research on invasive species prevention, control methods, and eradication techniques.
- AS-9: Engage Monument users and the public in preventing the introduction and spread of alien species.
  - AS-9.2: Integrate alien species information into general Monument outreach materials.
- AS-10: Participate in statewide and Pacific regional alien species efforts.
  - AS-10.1: Build relationships with other resource managers and invasive species experts in the State, nation, and other countries based on shared challenges concerning invasive species.
- 3.3.4: Emergency Response and Natural Resource Damage Assessment (ERDA) Action Plan.
  - ERDA-1: Create a Monument Emergency Response and Assessment Team within 1 year.
    - ERDA-1.4: Participate in damage assessment programs and training throughout the life of the plan.
    -

### 3.5: Coordinating Conservation and Management Activities.

- 3.5.1: Agency Coordination (AC) Action Plan.
  - AC-2: Establish and support cooperative management agreements with agency partners.
    - AC-2.2: Establish agreements for coordinated management and conduct cooperative management operations.
    - AC-2.3: Develop interagency agreements, grants, and memoranda of agreement as needed to carry our specific program priorities.
  - AC-3: Promote international, national, and local agency collaborations to increase capacity building and foster networks that will improve management effectiveness.
    - AC-3.2: Network with other marine protected areas in the Pacific.
- 3.5.2: Constituency Building and Outreach Action Plan.
  - CBO-1: Develop and implement an integrated communications strategy, based on assessment of ongoing activities and future needs, to coordinate outreach and engage Monument constituencies within 5 years.
    - CBO-1.1: Develop an integrated communications strategy based on an assessment of ongoing activities and future needs.
    - CBO-1.2: Continue to refine and implement the Monument Media Communications Protocol to engage news media in informing the public about the Monument’s resources and activities.
    - CBO-1.4: Incorporate new perspectives for understanding the value of NWHI ecosystems, including socioeconomic studies, to increase ocean ecosystems literacy and conservation in the Monument within 5 years.
    - CBO-1.5: Research and implement new technologies and tools to increase public understanding of the NWHI ecosystems within 5 years.
  - CBO-2: Continue to develop and disseminate materials and improve and update tools that help inform Monument constituencies about the Monument over the life of the plan.
    - CBO-2.2: Continue to develop and update printed materials to aid Monument constituencies in understanding key aspects of the Monument.
    - CBO-2.3: Support other entities’ efforts to broaden knowledge of and appreciation for Monument resources and management priorities.
  - CBO-3: Continue initiatives that allow Monument constituencies to be more involved in the Monument and enhance opportunities for long-term engagement over the life of the plan.
    - CBO-3.1: Continue to seek out and participate in events that reach a broader audience and provide constituents with knowledge of the Monument.



- CBO-3.3: Continue to seek out and support partnership opportunities that focus on Oceania-related issues.
- CBO-3.6: Continue to support the Native Hawaiian Cultural Working Group through the Office of Hawaiian Affairs.
- CBO-3.8: Continue to convene the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve Advisory Council (RAC) through NOAA’s Office of National Marine Sanctuaries until the Monument Alliance is established.
- 3.5.3: Native Hawaiian Community Involvement (NHCI) Action Plan.
  - NHCI-2: Develop and annually maintain partnerships with Native Hawaiian organizations and institutions.
    - NHCI-2.1: Continue to expand and explore opportunities to partner with institutions serving Native Hawaiians,
  - NHCI-3: Identify and integrate Native Hawaiian traditional knowledge and management concepts into Monument management annually for the life of the plan.
    - NHCI-3.1: Engage the Native Hawaiian community to identify how traditional knowledge will be integrated into Monument activities.
    - NHCI-3.2: Use and integrate Native Hawaiian traditional knowledge in Monument management activities.
- 3.5.4: Ocean Ecosystems Literacy (OEL) Action Plan.
  - OEL-1: Develop and implement educational programs in Hawai’i to increase ocean ecosystems literacy and promote stewardship values within 5 years.
    - OEL-1.3: Develop an ocean stewardship program for middle school and high school students within 5 years.
  - OEL-2: Develop and implement new tools to “bring the place to the people”, with a focus on students, within 3 years.
    - OEL-2.1: Identify and prioritize research and development projects to increase ocean ecosystems literacy and conservation in the NWHI.
    - OEL-2.2: Use telepresence for educational and outreach activities within 5 years.

### 3.6: Achieving Effective Monument Operations.

- 3.6.3: Coordinated Field Operations (CFO) Action Plan.
  - CFO-2: Enhance interagency planning and coordination for field operations in support of Monument protection and management, and develop protocols and processes that will be utilized throughout the life of the plan.
    - CFO-2.1: Develop interagency agreements to facilitate effective field coordination throughout the Monument.

- CFO-2.2: Develop and implement standardized field operations protocols.
- CFO-2.4: Annually coordinate field operations to efficiently deploy personnel and share resources among agency partners.

## 2. **Hawai'i Marine Debris Action Plan (HI-MDAP)** ([Link HERE](#))

Led by NOAA Marine Debris Program (MDP)

December 2021

### Goal 1: Prevention.

- Strategy 1.1: Change consumer behavior through outreach and education.
  - Action 1.1.1: Use social media as a platform for outreach.
  - 1.1.2: Conduct education and outreach to the general public, residents, military community, and visitors through, but not limited to, presentations, news events, featured speakers, and film screenings.
  - 1.1.6: Conduct education and outreach at schools and universities.
  - 1.1.6: Provide education on alternative products, make them accessible, and promote their use.
  - 1.1.8: Work with Hawai'i Marine Debris Action Plan (HI-MDAP) researchers to support one another in sharing accurate scientific information to the local community.
  - 1.1.9: Educate the public on marine debris generated through the commercial fishing industry, encourage increased understanding of where seafood comes from and how to support local fishers.

### Goal 2: Ocean-based Marine Debris.

- 2.1: Conduct education and outreach to ocean users on proper and legal waste management at sea.
  - 2.1.5: Educate and promote consumer understanding of the marine debris costs associated with certain fisheries and seafood choices.
- 2.2: Identify funding and provide low-cost and convenient disposal options for fishing gear and solid waste.
  - 2.2.6: Partner in the Hawai'i Nets-to-Energy program.
- 2.3: Identify fishing materials and practices designed to reduce marine debris.
  - 2.3.1: Gather and share best management practices for coastline fishing gear and methods.
  - 2.3.2: Learn more about smart fish aggregating devices (FAD).
- 2.4: Create public-private partnerships to develop industry standards for reducing marine debris.

- Engage with fisheries and gear manufacturers that are determined to be the source of derelict fishing gear washing into Hawai'i.
- 2.7: Effectively respond to abandoned and derelict vessels.
  - 2.7.2: Enhance interagency coordination for addressing abandoned and derelict vessels and maintain an abandoned and derelict vessel inventory for remote or difficult to access coastlines.

### Goal 3: Removal.

- 3.1: Utilize effective methods to locate marine debris accumulation.
  - 3.1.1: Continue to support the advancement of at-sea detection for marine debris through remote sensing.
  - 3.1.2: Continue monitoring efforts in the Papahānaumokuākea Marine National Monument to identify accumulation sites.
  - 3.1.6: Conduct annual aerial shoreline surveys and ground truthing (if UAS aerial surveys are permitted).
  - 3.1.7: Tag derelict fishing gear with GPS buoys to determine their location and potential marine debris accumulations.
- 3.3: Use available information to prioritize cleanup sites.
  - 3.3.2: Continue engagement with county, state and federal marine wildlife representatives regarding their high-priority regions/seasons by island.
- 3.4: Develop capacity for marine debris removal and disposal.
  - 3.4.1: Create and update island-specific flow chart options depicting the disposal and collaboration process.
  - 3.4.3: Expand the development and capacity to repurpose and recycle salvaged marine debris into infrastructure, materials, and products across all islands.
  - 3.4.8: Create a shared understanding within and outside of the Hawai'i Marine Debris Action Plan community, on what happens to debris after disposal.
- 3.5: Increase communication and collaboration to efficiently remove marine debris.
  - 3.5.4: Provide financial and logistical support for large-scale marine debris removal in the Papahānaumokuākea Marine National Monument.
  - 3.5.6: Develop and maintain a network of nongovernmental organizations and other partner on-water resources that can perform regular near-shore debris mass surveys, removal training, and removal operations, and coordinate disposal of debris found with shore-based cleanup partners.

### Goal 4: Research

- 4.1: Develop an understanding of marine debris physical and chemical traits, life cycle, sources, transport, fate, quantity, and accumulation rate.
  - 4.1.1: Conduct shoreline and in-water surveys regularly, and share data and survey methods to determine accumulation rates.

- 4.1.4: Use spatial mapping to compare areas of high removal effort to standing debris accumulations in order to evaluate the impact of cleanups and site monitoring.
- 4.1.7: Better identify sources of hagfish traps to determine the best prevention efforts.
- 4.1.8: Create a database of derelict fishing gear types and metrics in Hawai'i in order to try and identify the fishery or manufacturer sources.
- 4.1.11: Identify funding to continue sourcing derelict fishing gear marine debris and scaling up a centralized detection, removal, research, and repurposing program.
- 4.2: Develop or identify standardized methods or best management practices for applicable aspects of research to ensure data can be meaningfully analyzed.
  - 4.2.5: Identify standardized shoreline and in-water monitoring protocols throughout Hawai'i.
  - 4.2.8: Develop a method to identify gear types from derelict fishing gear.
- 4.3: Enhance and advance research on the ecological impacts of marine debris.
  - 4.3.1: Research the interaction of invasive species with marine debris, including species identification, impacts, transport, and fate.
  - 4.3.3: Monitor and assess information on the impacts of entanglement on wildlife.
  - 4.3.4: Monitor and assess information on the impacts of marine debris to habitats.
  - 4.3.6: Use structure-from-motion (SFM) imagery to quantify the volume of coral reef damage by derelict fishing gear strikes in Kaneohe Bay.
- 4.4: Improve research on the economic impacts of marine debris.
  - 4.4.5: Research the economic impacts of derelict fishing gear in Hawai'i.
- 4.5: Evaluate the effectiveness of mitigation, outreach, and removal efforts of marine debris.
  - 4.5.2: Investigate the effectiveness of marine debris and plastic education and outreach.
- 4.6: Support communication and collaboration of research to all stakeholders.
  - 4.6.1: Improve collaboration and data sharing amongst the local marine debris community through the publishing, compiling, and sharing of marine debris research completed in Hawai'i state and regional waters.
  - 4.6.4: Explore and share funding opportunities and develop partnerships to approach funding opportunities.
  - 4.6.5: Collaborate with international partners for marine debris research.
  - 4.6.6.: Participate in international conferences, partnerships, and other avenues of information sharing to highlight the relevance of marine debris in Hawai'i.

**3. Recovery Plan for the Hawaiian Monk Seal (*Monachus schauinslandi*) ([Link HERE](#))**

August 2007

Led by NOAA National Marine Fisheries Service

Recovery Goal: The goal of this revised recovery plan is to assure the long-term viability of the Hawaiian monk seal in the wild, allowing initially for reclassification to threatened status, and, ultimately, removal from the List of Endangered and Threatened Wildlife.

Significant threats that face this species: Entanglement of seals in marine debris has and continues to result in significant levels of seal mortality.

- Strategy 1: Improve the survivorship of females, particularly juveniles, in sub-populations of the NWHI. To do this requires:
  - Continuing actions to remove marine debris and reduce mortality of seals due to entanglement.

Recommended short-term actions:

- Strategy 2: Prevent entanglements of monk seals.
  - Action 2.1: Continue programs that facilitate the disentanglement of animals.
  - 2.2: Continue removing potentially hazardous debris.
    - 2.2.1: Continue focused clean-up effort on high entanglement risk zones in the water.
      - 2.2.1.1: Monitor marine debris accumulation rates and identify areas of greatest potential risk.
      - 2.2.1.2: Remove debris from beaches.
  - 2.3: Reduce the amount of debris.
    - 2.3.2: Implement education and marine debris reduction programs targeting identified sources.

**4. Mai Ka Pō Mai: A Native Hawaiian Guidance Document for the Management of Papahānaumokuākea Marine National Monument ([Link HERE](#))**

2021, Office of Hawaiian Affairs (added as a PMNM Co-Trustee in 2017)

Ho'oku'i: Papahānaumokuākea represents the rich Hawaiian heritage, cultural experiences, and wisdom that have cultivated healthy relationships among places and their peoples through time and space.

- Na Kuhikuhi (Strategies) Ho'oku'i-2: Ensure that policies and programs incorporate relevant cultural knowledge.

- Ho'oku'i-3: Use Hawaiian knowledge, language, values, traditions, and concepts throughout all areas of management and activities.
- Ho'oku'i-4: Manage data to support Monument and community based management.

Kūkulu 1. Ho'omana: Papahānaumokuākea is a living spiritual foundation and natural environment for Hawaiian existence.

- Ho'omana 1-1: Manage the natural-cultural landscape through the practice of aloha 'āina.
- Ho'omana 1-2: Perpetuate Hawaiian cultural practices, knowledge, and values.
- Ho'omana 1-3: Enhance protections through access for Native Hawaiians.
- Ho'omana 1-4: Amplify the cultural and spiritual experience.

Kūkulu 2. Hō'ike: Papahānaumokuākea is an abundant source of ancestral knowledge and a place where experts demonstrate excellence and advance knowledge systems.

- Hō'ike 2-1: Conduct research and monitoring in a manner that incorporates multiple perspectives, knowledge systems, and values.
- Hō'ike 2-2: Support, facilitate, and conduct Hawaiian methods of science and research.
- Hō'ike 2-4: Promote alignment of research initiatives of the co-managing agencies and permittees to advance Hawaiian research agenda items.

Kūkulu 3. Ho'oulu: Inspire and grow thriving communities.

- Ho'oulu 3-1: Engage and collaborate with communities and leaders involved in mālama 'āina work.
- Ho'oulu 3-3: Develop partnerships and collaborations with other organizations to support Papahānaumokuākea programs and initiatives.
- Ho'oulu 3-4: Develop and support initiatives that focus on next-generation capacity building for leadership succession.

Kūkulu 4. Ho'olaha: Papahānaumokuākea provides cultural pathways and ancestral wisdom that extends through time and space.

- Ho'olaha 4-1: Develop educational programs and initiatives that are based on Hawaiian cultural values, concepts, and traditional resource management stewardship.
- Ho'olaha 4-2: Identify, share, and promote innovative research and other place-based activities in PMNM that can serve as models to inform resource management in the main Hawaiian Islands.
- Ho'olaha 4-4: Incorporate Hawaiian values, traditions, and histories into Monument communication strategies to better connect the public to the Monument.

## 5. **Endangered Species Act, 1973** ([Link HERE](#))

Implemented by NOAA Fisheries and the U.S. Fish and Wildlife Services.

- Section 4: Designates critical habitat for the conservation of the species (endangered Hawaiian monk seal and threatened green sea turtle).
- Section 4: Developing and implementing recovery plans for listed species (endangered Hawaiian monk seal and threatened green sea turtle).
- Section 10: Cooperating with non-federal partners to develop conservation plans, safe harbor agreements, and candidate conservation agreements with assurances for the long-term conservation of species.
- Section 10: Issuing permits that authorize scientific research to learn more about listed species, or activities that enhance the propagation or survival of listed species.

**6. Marine Mammal Protection Act, 1972 ([Link HERE](#))**

Implemented by NOAA Fisheries, the U.S. Fish and Wildlife Services, and Marine Mammal Commission.

- NOAA Fisheries performs the following conservation and management actions:
- Develops and implements conservation plans for species designated as depleted.
- Develops and implements take reduction plans to minimize dead and seriously injured marine mammals in commercial fishing gear.

**Other information or background:**

The Hawaiian Archipelago, specifically the Papahānaumokuākea Marine National Monument (PMNM) is centrally situated within the world's largest ocean gyre, known as the North Pacific Gyre. This gyre comprises a system of clockwise ocean currents that gather marine debris originating from the North Pacific Ocean, including regions like East Asia, the Aleutian Islands, the North American West Coast, and the equatorial zone. These debris converge into the gyre's convergence zones, located just north of the Hawaiian Islands. Coupled with prevailing northeast tradewinds and significant north swells, the PMNM becomes a substantial repository for marine debris.

The PMNM encompasses all of the Northwestern Hawaiian Islands (NWHI), including its islands, atolls, coral reefs, shoals, and seamounts. This area holds 70% of all shallow-water coral reef habitats (<200 m) in the United States. Designated a World Heritage Site by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 2010, PMNM is home to more than 7,000 marine species, with 25% being endemic, found only in the Hawaiian Archipelago.

Papahānaumokuākea is deeply significant in the ancestry of Kānaka Maoli (Native Hawaiian people), representing an extension of their genealogy tracing back to the elemental energies that birthed the Pae 'āina Hawai'i (Hawaiian archipelago). Venturing into Papahānaumokuākea means reconnecting with Hawaiian ancestral ties, transitioning from Ao (light, day; the realm of humans) to Pō (dark, night; the realm of the gods). This place, frequented by kūpuna (elders) for thousands of years, holds profound

cultural and genealogical significance, as reflected in the Kumulipo, a Hawaiian cosmogonical genealogy chant.

In line with the Kumulipo, the chant conveys the interconnectedness of realms, underscoring that “He ali’i ka ‘āina, He kauwa ke kanaka” (“The land is the chief, man is the servant”). As humans, it is our kūleana (responsibility) to mālama (care for) Papahānaumokuākea, maintaining balance within the system. Our endeavors to clean marine debris uphold our cultural and genealogical connection to not only Papahānaumokuākea but to all Hawai’i.

Since 1996, the Project (formerly led by NOAA Fisheries and other agencies) has conducted large-scale marine debris removals to mitigate the entanglement and ingestion threat to protected wildlife and damage to coral reefs and has successfully removed a total of 1,270 metric tons (2.8 million pounds) of marine debris from the PMNM (with PMDP supporting 364 metric tons or 802,000 pounds during 2020-2023). The Project has also disentangled numerous marine animals. Of the estimated 1,500 remaining Hawaiian monk seals (which face the highest documented entanglement rate of any pinniped species), approximately 32% are alive today due to marine debris removal efforts, disentanglements, and rehabilitation endeavors (Harting et al., 2014). The [NOAA NMFS Recovery Plan for the Hawaiian Monk Seal \(2007\)](#) highlights a minimum of 2.3 serious injuries or deaths annually due to fishery-related marine debris.

Marine debris and derelict fishing gear have pervasive impacts across the Hawaiian Archipelago, affecting all inhabitants – both human and wildlife. Whether entangling marine animals (seals, turtles, whales, fish, and invertebrates) or adversely impacting corals, marine debris poses a serious threat to fragile coral ecosystems, particularly within the PMNM, known for being among the most biologically diverse and economically valuable ecosystems globally (Bryant et al., 1997). The entanglement of monk seals remains a critical concern, particularly in the absence of a formal Project led by NOAA. The frequency of monk seals found entangled has remained unchanged, and marine debris accumulation rates in the PMNM have not decreased. Fortunately, PMDP diligently fulfills its role in safeguarding the marine environment and ocean wildlife from the adverse effects of marine debris by continuing large-scale marine debris removal operations within the PMNM.

“Papahānaumokuākea’s ecosystems are increasingly under pressure from threats such as marine debris, invasive species, and climate change,” said Rick Spinrad, Ph.D., NOAA Administrator. “Designation of the monument’s waters as a national marine sanctuary would complement the efforts of the four co-trustees to safeguard the Monument’s natural, cultural, and historic values.”

NOAA Considers Sanctuary off Hawaiian Islands – (November 19, 2021)

<https://www.noaa.gov/news-release/noaa-considers-marine-sanctuary-off-hawaiian-islands>



**Section A - Applicant Information**

**1. Applicant**

Name (last, first, middle initial): Morioka, James, M.

Title: Executive Director, Papahānaumokuākea Marine Debris Project (PMDP)

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

James Morioka (CV attached)  
Executive Director  
Papahānaumokuākea Marine Debris Project (PMDP)  
SEE ORIGINAL APP FOR CONTACT INFO  
SEE ORIGINAL APP FOR CONTACT INFO  
SEE ORIGINAL APP FOR CONTACT INFO  
Email: [james@pmdphawaii.org](mailto:james@pmdphawaii.org)

Kevin O'Brien (CV attached)  
President and Founder  
Papahānaumokuākea Marine Debris Project (PMDP)  
SEE ORIGINAL APP FOR CONTACT INFO  
SEE ORIGINAL APP FOR CONTACT INFO  
SEE ORIGINAL APP FOR CONTACT INFO  
Email: [kevin@pmdphawaii.org](mailto:kevin@pmdphawaii.org)

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

SEE ORIGINAL APP FOR CONTACT INFO

SEE ORIGINAL APP FOR CONTACT INFO  
SEE ORIGINAL APP FOR CONTACT INFO

Phone: SEE ORIGINAL APP FOR CONTACT INFO  
Fax: N/A  
Email: [james@pmdphawaii.org](mailto:james@pmdphawaii.org)

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

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

Papahānaumokuākea Marine Debris Project (PMDP) – U.S. 501(c)(3) non-profit organization.

**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):**

**PMDP Staff:**

1. James Morioka (PMDP, Executive Director), Co-Field PI, PMDP-2024-02 Mission Lead, Diver and Small Boat Operator
2. Kevin O'Brien (PMDP, President), Co-Field PI, PMDP-2024-01 and PMDP-2024-03 Mission Lead, Diver and Small Boat Operator
3. TBD (PMDP), Diver and Small Boat Operator
4. TBD (PMDP), Diver and Small Boat Operator
5. TBD (PMDP), Diver and Small Boat Operator
6. TBD (PMDP), Diver and Small Boat Operator
7. TBD (PMDP), Diver and Small Boat Operator
8. TBD (PMDP), Diver and Small Boat Operator
9. TBD (PMDP), Diver and Small Boat Operator
10. TBD (PMDP), Diver and Small Boat Operator
11. TBD (PMDP), Diver and Small Boat Operator
12. TBD (PMDP), Diver and Small Boat Operator
13. TBD (PMDP), Diver and Small Boat Operator
14. TBD (PMDP), Diver and Small Boat Operator
15. TBD (PMDP), Diver and Small Boat Operator
16. TBD (PMDP), Diver and Small Boat Operator
17. TBD (PMDP), Diver and Small Boat Operator

**M/V Imua Staff:**

1. Dennis Hans Bishop (Hawai'i Resource Group – HRG), Captain, M/V *Imua*
2. TBD (HRG), First Mate, M/V *Imua*
3. TBD (HRG), Second Mate, M/V *Imua*
4. TBD (HRG), Lead Engineer, M/V *Imua*
5. TBD (HRG), Deckhand, M/V *Imua*
6. TBD (HRG), Deckhand, M/V *Imua*
7. TBD (HRG), Cook, M/V *Imua*

**Note:**

- *PMDP-2024-01: There will be a total of 12 PMDP staff for the shore-based mission.*

- *PMDP-2024-02 and PMDP-2024-03: There will be a total of 23 individuals per ship-based mission. Of the 23 individuals, 16 individuals (berthing limitations) will be from PMDP, and 7 individuals from Hawai'i Resource Group (HRG, M/V Imua) for each of the proposed 30-day missions to the PMNM.*

*The actual individuals covered by this permit may exceed 24 total, due to staffing changes that occur between the three proposed PMDP field missions.*

**Section B: Project Information**

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

**Ocean Based**

<input type="checkbox"/> Nihoa Island	<input type="checkbox"/> Land-based	<input 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 checked="" type="checkbox"/> French Frigate Shoals	<input checked="" type="checkbox"/> Land-based	<input checked="" 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 checked="" type="checkbox"/> Maro Reef	<input type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Laysan Island	<input checked="" type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Lisianski Island, Neva Shoal	<input checked="" type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Pearl and Hermes Atoll	<input checked="" type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Midway Atoll	<input checked="" type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input checked="" type="checkbox"/> Kure Atoll	<input checked="" type="checkbox"/> Land-based	<input checked="" type="checkbox"/> Shallow water	<input type="checkbox"/> Deep water
<input type="checkbox"/> Monument Expansion Area			
<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:**

- PMDP-2024-01: All PMDP staff will overnight at Charlie Barracks on Sand Island at Kuaihelani (Midway Atoll) for the duration of the shore-based mission.
- PMDP-2024-02: No staff will remain onshore on any island or atoll.
- PMDP-2024-03: No staff will remain onshore on any island or atoll.

**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:***

All activities described in this application are directed towards the betterment of the Papahānaumokuākea Marine National Monument and the wildlife that reside there. All of the information is then compiled to develop, implement, and assess strategies to support management and recovery plans, included but not limited to: 1) [Papahānaumokuākea Marine National Monument \(PMNM\) Management Plan](#), 2) [Hawai'i Marine Debris Action Plan \(HI-MDAP\)](#), 3) [Recovery Plan for the Hawaiian Monk Seal](#), 4) [Mai Ka Po Mai: A Guidance Document for Papahānaumokuākea](#), 5) [Endangered Species Act of 1973 \(ESA\)](#) and the 6) [Marine Mammal Protection Act of 1972 \(MMPA\)](#)."

\*Considering the purpose of the proposed activities, do you intend to film / photograph federally protected species beyond the protocols provided in PMNM Best Management Practices (<https://www.papahanaumokuakea.gov/permit/bestmanagement.html>)? Yes  No

All BMPs will be strictly enforced. All footage (film / photograph) will be provided to the four Co-Managing agencies (NOAA, U.S. Fish and Wildlife Services, State of Hawai'i, Office of Hawaii Affairs) upon return from PMNM.

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

PMDP is committed to capturing film and photographs of protected wildlife, such as the Hawaiian monk seal, sea turtles, and sea birds, interacting with or being impacted by marine debris while adhering strictly to all PMNM Best Management Practices (BMPs). In cases where protected wildlife becomes entangled in marine debris, and with appropriate permits as Co-Investigators under NOAA National Marine Fisheries Services (NMFS) permits, PMDP will collaborate with partners at the NOAA Pacific Islands Fisheries Science Center (PIFSC) Protected Species Division (PSD), U.S. Fish and Wildlife Services, and the State of Hawai'i to assess the threat to wildlife and implement risk mitigation strategies to the best of their ability. If seals or

turtles are critically entangled, PMDP personnel, trained in collaboration with the NOAA NMFS PIFSC PSD, may intervene to prevent potentially fatal outcomes through disentanglement.

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:**

All activities described in Section 7. Findings (below) refer to specific Best Management Practices (BMPs) or programmatic assessment/guidance documents that include, but are not limited to:

1. [PMNM BMP #001 – Marine Alien Species Inspection Standards for Maritime Vessels](#)
2. [PMNM BMP #004 – Best Management Practices for Boat Operations and Diving Activities](#)
3. [PMNM BMP #007 – Best Management Practices for Terrestrial Biosecurity](#)
4. [PMNM BMP #010 – Marine Wildlife Viewing Guidelines](#)
5. [PMNM BMP #020 -- Minimize the Spread of Nuisance Algae](#)
6. [NOAA PIFSC CRED Programmatic Ecological Assessment \(PEA\) under National Environmental Policy Act \(NEPA\)](#)
7. [NOAA PIFSC CRED PEA Signatures](#)
8. [NOAA PIFSC CRED Finding of No Significant Impact \(FONSI\)](#)
9. [Cultural-based Strategy for Marine Debris Removal Operations](#)
10. [Marine Debris Removal Criteria](#)

**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 proposed by the Papahānaumokuākea Marine Debris Project (PMDP) in this PMNM Conservation and Management permit application will be executed with stringent safeguards to protect the natural, cultural, and historic resources of the Monument as required by [Presidential Proclamation 8031](#), and other applicable laws, agency policies, and standard operating procedures. PMDP will provided detailed field protocols and best management practices (BMP)

to all involved agencies. These practices and procedures will effectively reduce or eliminate disturbances to wildlife, flora, habitat, and cultural and historic resources.

PMDP conducts comprehensive training for PMNM (biological and environmental) aspects, ship operations, small boat operations, and free-dive/snorkel operations prior to at-sea field operations. This training regimen mirrors the rigorous training led by both James Morioka (PMDP Executive Director) and Kevin O’Brien (PMDP President) at NOAA for all field staff in between 2007-2021. This training encompasses marine debris removal activities as well as the safeguarding and minimizing of impacts on other natural and cultural resources. It will be supplemented by PMNM pre-access and cultural briefings for all staff. Furthermore, a PMNM-approved Resource Monitor (Morioka and O’Brien have both served in the PMNM Resource Monitor role) will accompany all permitted activities to oversee and ensure compliance with permit conditions and BMPs.

PMDP proposes the use of small Unmanned Aerial Systems (sUAS, commonly referred to as ‘drones’) for surveys of derelict fishing nets on coral reefs, using a DJI Mavic Pro 3. The Project piloted this study in 2018, mapping over 2 square kilometers of coral reef area and ground-truthing the imagery for nets with divers in the water. The Project successfully demonstrated that the proof of concept for aerial net detection, and PMDP aims to capture more imagery to enhance artificial intelligence (AI) detection software for detect derelict fishing nets on shallow water coral reef environments through machine-learning. Trained and certified staff will operate the sUAS, following all relevant PMNM BMPs and protocols specific to deployment, retrieval, and operations of the sUAS. The sUAS will be deployed and recovered from a small boat, flying a minimum altitude of 100 feet and a maximum altitude of 400 feet over the reef or land. Interactions with birds and other wildlife will be closely monitored, and sUAS operations will be halted should significant interactions occur.

In addition to sUAS, Diver Propulsion Vehicles (DPVs) will be integrated into the operational procedures. Leveraging DPVs will enable PMDP’s expert divers to efficiently assess and survey shallow coral reef environments for derelict fishing nets. This streamlined process in locating the marine debris will optimize the time spent on cutting and lifting the nets into the small boats, ultimately resulting in a higher quantity of marine debris successfully removed.

Stringent biosecurity quarantine procedures (outlined under [PMNM BMP 007](#)) will be adhered to and enforced at each island where personnel land on shore or boats and divers enter the water. This includes use of gear purchased new and dedicated to each island/atoll. Thorough cleaning, biosecurity, and safe storage protocols will be observed between field missions.

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

The NOAA Northwestern Hawaiian Islands (NWHI) Marine Debris Project, referred to as the ‘Project’ and led by NOAA and other agency partner, has been actively engaged in extensive marine debris removal operations and other conservation and management initiatives within the NWHI since 1996. Over the years, NOAA and its partners have diligently crafted and refined protocols for surveying, mitigating, and removing marine debris, a critical threat to wildlife and vital habitats. While these operations carry the potential for negative impact on cultural and natural resources, NOAA previously conducted a Programmatic Environmental Assessment (PEA or EA) under the National Environmental Policy Act (NEPA), resulting in a Finding of No Significant Impact (FONSI) in June 2005 (valid indefinitely) for the Project. PMDP’s operation strictly adheres to all existing NOAA protocols and procedures, ensuring the safe execution of the mission.

For new and particularly sensitive activities, such as addressing a nuisance algal outbreak like *Chondria tumulosa* at Kuaihelani (Midway Atoll), Manawai (Pearl and Hermes Atoll), and Hōlanikū (Kure Atoll), we will proactively communicate and collaborate with our Monument partners, providing clear justification and the necessity for each activity.

Papahānaumokuākea epitomizes ‘āina momona (fat lands, fertile or rich lands). It serves as a tangible example of how our ‘āina should abundantly produce resources, holding immense cultural significance. From the perspective of Kānaka Maoli worldview, understanding these mauka to makai (mountain to sea, land to ocean) connections is vital for indigenous knowledge. The flourishing ecosystems and habitats of Papahānaumokuākea act as a living testament, aiding in comprehending the stories, history, and relationships practiced by kūpuna (ancestors). It provides a living space for Kānaka Maoli to reconnect and expand upon cultural practices. The removal of marine debris becomes a crucial aid to safeguard, perpetuate, and enhance this special place, its ecosystem, and its cultural resources for future generations.

PMDP has actively collaborated with the Native Hawaiian community and intends to continue this collaboration indefinitely. Specifically, we have partnered with the Office of Hawaiian Affairs (OHA) and PMNM’s Native Hawaiian Program Specialist Kalani Quiocho, to develop a [culture-based strategy](#) for the Project. This strategy aims to enhance inclusivity and collaboration with the Native Hawaiian community, facilitating access to the PMNM, creating culture-based outreach materials, and adhering to traditional protocols and procedures while in the field.



**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.**

Marine debris remains and will persist as a significant threat to the PMNM without a comprehensive annual large-scale marine debris removal effort (requiring removal of >57 tons annually). Marine debris, in general, poses substantial risks and threats to wildlife and essential habitat in Hawai'i. However, the marine debris challenges facing PMNM differ significantly from those of the Main Hawaiian Islands (MHI).

The PMNM comprises of islands and atolls with ancient origins, forming over Hawai'i's hotspot (underwater geological volcanic island formation), as early as 30 million years ago (Hōlanikū – Kure Atoll). These islands have moved northwest (nearly 3000 km or 1900 miles) due to the Pacific tectonic plate's movement and have sunk back into the ocean, transforming large volcanic islands (like the Big Island of Hawai'i) into shallow atolls, shoals, and expansive reef areas.

The emergent land mass in the PMNM is about 15 square kilometers, whereas shallow reef area (between 0-30 ft depth) is estimated to be 350 square kilometers. In contrast, the MHI is estimated to have over 16,000 square kilometers of emergent land area but only ~320 square kilometers of shallow reef area. The MHI consists of high volcanic islands with steep reef drop-offs from shore, whereas the NWHI landscape is dominated by isolated clusters of low-lying islands, barrier reefs, and calm lagoons with expansive shallow reef formations. Consequently, the issue of in-water or underwater marine debris, particularly derelict fishing gear (DFG), has a significantly more adverse impact on the PMNM compared to the MHI (as nets become snagged on shallow corals rather than washing onto the shorelines). Recent research (co-authored by K. O'Brien and J. Morioka) demonstrated that reefs in PMNM experiencing interactions with DFG have a higher occurrence of bare (dead) substrate (Suka, et al. 2020).

**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 primary goal of all proposed activities is to safeguard PMNM and its natural, historical, and cultural assets by eradicating anthropogenic threats to coral reefs, wildlife and their crucial habitats. PMDP aspires to embody an organization that upholds the stringent standards necessary for access to the PMNM. Numerous safeguards are meticulously implemented to minimize the potential negative impacts on the PMNM's resources, encompassing biosecurity measures, specific marine debris removal criteria, and nuisance algae Best Management Practices (BMPs). The Project has, to date, made a significant positive impact on PMNM resources and we anticipate this impact will persist in the future.

PMDP firmly believes that fostering a sense of community vested in a positive outcome for Papahānaumokuākea is the most effective model for stewardship of protected resources. Given the incredibly diverse community here in Hawai'i, nurturing an understanding and affection for PMNM can establish genuine and enduring support for these activities. The outreach and education aspect of the proposed marine debris removal activities cannot be understated. Since the general public is unable to visit PMNM due to its protected status, the oral, written, and visual narratives brought back to our community from PMNM hold significant importance in building and nurturing a stewardship community. Additionally, we aspire to facilitate Native Hawaiians' access to PMNM, offering opportunities for them to participate as members of the marine debris field team. This approach is pivotal in forging a novel model that integrates Western science-based projects, indigenous ways of knowing, and conservation efforts.

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

The Project, formerly branded as the 'NOAA NWHI Marine Debris Project' and led by NOAA in collaboration with other agency partners, commenced in 1996. Its initial objective was to conduct large-scale operations aimed at eliminating the accumulated marine debris on shallow coral reef environments. This was achieved through the utilization of multiple vessels over several months annually between 1999-2004. By 2006, NOAA determined the backlog of accumulated marine debris had been successfully cleared and transitioned to a 'maintenance mode' approach, targeting the removal of 57 tons (52 metric tons of 115,000 pounds) of marine debris annually (as per Dameron et al., 2007). However, between 2006-2021, due to diminishing funding and resources available for annual removal missions, the removal of marine debris fell behind the accumulation rate, resulting in a current backlog estimated at ~1,000,000 pounds.

PMDP took the initiative in 2022 to address the legacy, backlogged marine debris, while also keeping pace with the annual accumulation of 57 tons of new marine debris. PMDP anticipates a continued trend of removing more than 57 tons of marine debris from PMNM each year up to 2027. It is PMDP's aspiration that once the backlog of marine debris is entirely cleared, efforts can be redirected towards shoreline marine debris (currently unquantified) and conducting regular maintenance on the coral reef ecosystems.

A typical 30-day mission to the PMNM can yield approximately 21 operational days, subject to weather conditions, scheduling, and project scope. With a team of 16 PMDP staff (comprising 4 boat teams of 4 divers), each operational day can effectively remove an estimated 6,500 pounds of marine debris. Therefore, aligning all the elements optimally, each PMDP 30-day mission can potentially remove ~135,000 pounds (~67 tons) of marine debris. With the plan to conduct at least two 30-day missions annually (60+ days at sea, and ~270,000 pounds of marine debris removed annually), PMDP envisions transitioning to a "maintenance mode". If there is increased

funding or in-kind support enabling additional field missions on top of the 60-day annual baseline, this timeline to transition to maintenance mode could be significantly shortened.

The above description of accumulation and backlog specifically refers to in-water Derelict Fishing Gear (DFG). Shoreline DFG and plastics are not encompassed in these estimates, presenting another significant challenge in terms of time and resources required for their effective management. Thus, unlike many other proposed projects within PMNM, the effectiveness of our proposed approach directly corresponds to the project's duration.

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

PMDP is well-equipped to continue leading this project safely and efficiently, benefiting from the expertise of individuals overseeing both management and field operations. James Morioka, the Executive Director of PMDP, previously led and managed the NOAA NWHI Marine Debris Project in the PMNM for NOAA from 2015 to 2021, prior to his role with PMDP. Kevin O'Brien, President and Founder of PMDP, spearheaded field operations for the NOAA Marine Debris Project from 2013 to 2018. During their combined nine-year tenure co-leading and managing the project at NOAA, both demonstrated a strong commitment to safety, successful project outcomes, meticulous attention to detail, and extensive institutional knowledge of marine debris removal operations. James Morioka additionally served as the Operations Manager and Vessel Operations Coordinator for the NOAA Pacific Islands Fisheries Science Center (PIFSC) Ecosystem Sciences Division (ESD), where he developed protocols and best practices for executing safe small boat and dive operations from larger vessels, while providing subject matter expertise for Best Management Practices (BMPs) for PMNM. This expertise includes recent contributions related to addressing the nuisance algae, *Chondria tumulosa*.

**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.**

PMDP was established in 2019 with the explicit purpose of relieving the Government and the PMNM Co-Trustees from the sole responsibility of funding and conducting marine debris removal efforts in the Monument. As governmental resources dwindled over the last 15 years, it became necessary to devise an additional mechanism to broaden the funding base, including sources that were not accessible to NOAA during the Project's tenure. This was aimed at creating an organization that could act as a focal point for collaborative planning and execution of these crucial missions. PMDP has now reached a point where it possesses the essential elements – staff, facilities, and assets – to independently conduct full-scale removal missions.

In fiscal year 2021, PMDP successfully executed three ‘proof-of-concept’ field missions with a budget of \$410,000:

- October 2020: 16-day hurricane debris removal effort at Tern Island, Lālo (French Frigate Shoals)
- March 2021: 23-day shoreline marine debris removal across all islands and atolls within Papahānaumokuākea.
- September 2021: 30-day in-water and shoreline marine debris removal across all islands within Papahānaumokuākea.

These missions were carried out in collaboration with the U.S. Fish and Wildlife Services (USFWS), the State of Hawai‘i Department of Land and Natural Resources (DLNR), and NOAA Pacific Islands Fisheries Science Center (PIFSC). In-kind support was also provided by these agencies, helping to share costs for these collaborative removal projects.

For fiscal year 2022 and 2023, PMDP was allocated a budget of \$2,186,000 from the National Fish and Wildlife Foundation (NFWF), enabling the successful execution of four large-scale underwater remote-island marine debris removal missions to PMNM. These efforts resulted in the removal of over 414,000 pounds of marine debris and the restoration of more than 4,000 acres of shallow coral reef habitat:

- July 2022: 28-day in-water and shoreline marine debris removal across all islands within Papahānaumokuākea.
- September 2022: 28-day in-water and shoreline marine debris removal across all islands within Papahānaumokuākea.
- July 2023: 28-day in-water and shoreline marine debris removal across all islands within Papahānaumokuākea.
- September 2023: 28-day in-water and shoreline marine debris removal across all islands within Papahānaumokuākea.

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

All activities proposed by PMDP in this permit application will strictly adhere to established NOAA protocols from prior years. PMDP is committed to not only complying with but also enhancing all PMNM Best Management Practices (BMPs) and regulations that align with our activities.

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

Yes, the vessel (M/V Imua) facilitating the proposed activities are outfitted with the mobile transceiver.

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

All other approvals have been obtained for the proposed activities, and all permit applicants have maintained compliance with previous PMNM permits, primarily facilitated through NOAA channels.

**8. Procedures/Methods:**

The following list of activities aims to promote the PMNM and its resources:

**Marine Debris Survey and Removal Operations:**

Note: If the nuisance algae, *Chondria tumulosa*, is identified on the marine debris or in the nearby habitat (currently identified at Kuaihelani, Manawai, and Hōlanikū), its specific location within the atoll/island will be marked with a Global Positioning System (GPS) unit, and the marine debris will be left in place (pending further guidance from the MMB). Shoreline marine debris removal operations at islands/atolls with *Chondria tumulosa* will follow the strict Nuisance Algae BMP #020 and Supplemental Biosecurity Plans (attached).

**In-Water Marine Debris Survey and Removal Operations:**

Three (3) methods are used for in-water or underwater survey and removal of derelict fishing gear (DFG):

- **Tow-board Surveys:** This method allows for rapid visual surveys in shallow water (0-30 ft depth) and maximum area coverage, employing breath-hold techniques by two divers towed behind a 19-ft inflatable boat at 1-2 knots across reefs.
- **Swim Surveys:** Primarily used within atoll lagoons around reticulated reefs or in areas too shallow or intricate for effective tow-board operations.
- **Diver Propulsion Vehicle (DPV) Surveys:** These are utilized within atoll lagoons around reticulated reef areas to cover more reef area per unit of time, aiding in more efficient marine debris detection and removal.

For all three methods (detailed above), divers conduct surveys until DFG is visually located entangled on the reef. Once located, the net location (latitude, longitude), net characteristic (type, length, width, height, depth, foul level, coral growth) and habitat data are collected. A debris removal decision-tree is then used to determine whether net removal is appropriate and won't cause additional reef damage (see Supplemental Biosecurity Plan). If removal is deemed

appropriate, divers cut the DFG free from the substrate while minimizing impact to the entangled coral and surrounding reef habitat. The DFG is then loaded by hand into inflatable boats for transport back to the ship, and ultimately transported back to Honolulu, Hawai'i for proper disposal.

Shoreline Marine Debris Survey and Removal Operations:

- Shoreline Surveys: PMDP staff will conduct surveys by walking the shorelines (between low-tide line and vegetation on shore) of the islands and atolls within PMNM to survey for and remove marine debris. The Project primarily focuses on surveying for and removing entanglement and ingestion hazards to wildlife. Once the marine debris is identified, collected, and staged at a 'pick-up point', 19-ft inflatable boats will approach accessible shorelines to load the marine debris safely to transport back to the ship, and ultimately transport back to Honolulu, Hawai'i for proper disposal.

Aerial Marine Debris Survey Operations:

- Small Unmanned Aerial Systems (sUAS) Surveys: These surveys are expected to cover all islands/atolls and will be deployed and retrieved from inflatable boats when possible. The goal is to identify areas of high-density debris accumulation, marine debris items of interest, and to attempt quantification and characterization of the marine debris present on shorelines of the islands and atolls within Papahānaumokuākea Marine National Monument. Strict sUAS protocols (FAA Part 107 regulations) and BMPs will be followed and enforced for aerial survey operations. Flights will maintain altitudes between a minimum of 100 feet (over land or reef) and a maximum of 400 feet.

Wildlife Disentanglement Operations:

The Project often encounters marine wildlife entangled in marine debris. Marine wildlife in the PMNM are protected and managed by the State and Federal government, and are protected by laws, rules and regulation that prohibit the interaction and intervention with wildlife. If granted the necessary permissions, PMDP staff who are fully qualified, certified, and trained in handling, restraining, and disentangling marine wildlife will assess the situation and report the outcomes to the appropriate office for guidance and next steps.

- Hawaiian Monk Seal Disentanglement Operations: Hawaiian monk seals are often entangled in marine debris, necessitating intervention and disentanglement for their survival. When an entangled Hawaiian monk seal is identified, PMDP staff will promptly notify the NOAA NMFS PIFSC Protected Species Division (PSD) Hawaiian Monk Seal Research Program (HMSRP) of the situation. A full assessment of the seal's health and surrounding habitat will be conducted and relayed to the HMSRP office. James Morioka (Executive Director, PMDP) is a professionally trained Hawaiian monk seal handler with prior experience at NOAA PSD HMSRP from 2011-2013. He has assisted in handling and disentangling numerous seals in the PMNM. If authorized, James Morioka or other

authorized Co-Investigators on the NOAA NMSF Permit (Permit #22677) would lead a team to handle, restrain, and disentangle the endangered seal using established protocols and procedures, including manual restraint, hoop-net restraint, or stretcher-net restraint methods.

- Marine Turtle Disentanglement Operations: Marine turtles are frequently entangled in marine debris, particularly in shallow water coral reef environments. When a turtle is identified as entangled, the team will assess the turtle and its surrounding environment. If permitted, and the disentangling scenario does not cause further risk to the staff and Project, the team will handle the rescue of turtle, ensuring the turtle’s head remains above water for effective breathing, and proceed with the disentanglement and release into the wild process.

Marine Debris Transport and Disposal:

Marine debris collected from within the Papahānaumokuākea Marine National Monument will be managed as follows (for more details, please refer to the Supplemental Biosecurity Plan):

1. All marine debris will be stored in PMDP’s specialized marine debris storage bins or placed in super sacks.
2. When derelict fishing nets are stored in **PMDP’s marine debris storage bins**, they will be cut to appropriate sizes in the field. These nets will remain contained in the bins until they arrive in Honolulu. Upon arrival, the marine debris storage bins will be craned off the ship wholesale and transported directly to either:
  - a. **H-Power/Covanta Energy** through Hawaii’s “Waste to Energy” initiative for direct incineration, or
  - b. **Hawaii’s Department of Transportation** “Nets to Roads” initiative, which is facilitated by Hawaii Pacific University’s Center for Marine Debris Research.
3. All other marine debris not stored in PMDP’s marine debris storage bins, primarily ocean plastics, will be stored in **supersacks** on the ship’s deck until they reach Honolulu. Upon arrival in Honolulu, this debris will be craned off the ship and placed in roll-off containers provided by Schnitzer Steel. These containers will then be transported to H-Power/Covanta for incineration and disposal.

PMDP actively seeks innovative, alternative disposal methods for marine debris collected in the PMNM. An educational initiative, the Ocean Plastics Student Makerspace, has been established in collaboration with Le Jardin Academy, a high school located in Kailua, Hawaii. This project involves building small-scale recycling machines to shred, melt, and mold ocean plastics from PMNM into new products designed by students. The products created aim to raise awareness about the size and scale of the marine debris issue in PMNM and actively engage the local community in combating the problem in the Main Hawaiian Islands. While the volume of plastics processed through this method is limited, it’s important to note that the Hawai’i Waste to

Energy Partnership remains the primary disposal method for the majority of marine debris removed from PMNM.

**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:

Red algae

Scientific name:

*Chondria tumulosa*

# & size of specimens:

Collect and preserve four samples (4" x 4" x 4" sample, softball size):

1. Freeze (frozen as-is).
2. Salted fresh (salted with table salt as-is).
3. Ethanol (preserved in ethanol as-is).
4. Dried (dried at room temperature in the dark as-is).

Collection location:

Kuaihelani, Manawai, Hōlanikū, or areas of new discoveries.

Whole Organism  Partial Organism

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

If the Monument Management Board (MMB) or Resource Protection Working Group (RPWG) requests samples of *Chondria tumulosa* and/or other nuisance algae observed and collected in the field at Nuisance Algae Mitigation Zones (NAMZs) such as Kuaihelani, Manawai, or Hōlanikū for genetic testing, the specimens will be sent directly to the University of Hawai'i at Manoa (in collaboration with the University of Charleston) for genetic sampling.

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

Preserved.

- General site/location for collections:



Samples will only be collected if specifically requested by the MMB or Resource Protection Working Group. The areas most likely to have *Chondria tumulosa* are Kuaihelani, Manawai, and Hōlanikū.

• 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?**

Collect and preserved in the field (in-situ) as follows, before transportation back to Honolulu, Hawai'i using the larger vessel, M/V *Imua*:

1. Freezing
2. Salting (fresh)
3. Ethanol
4. Drying

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

Genetic sampling through the University of Hawai'i at Manoa.

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

Whirlpack bags and secondary containers.

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

A complete list of hazardous materials will be included in the supplemental material, but in general, is limited to:

- Pool-shock bleach (concentrated sodium hypochlorite solution)
- Ethanol
- Fuel (non-ethanol 89 grade gasoline)
- Hypalon glue (for inflatable boats)
- Motor oil (for small boats)
- Other applicable small boat support supplies (i.e., grease, adhesives, etc.)

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

None.

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

Genetic sampling and information distribution can be completed within 2 weeks of arrival back to Honolulu, Hawai'i, with a maximum timeline of 6 months for the entire process.

**16. List all Applicant's publications directly related to the proposed project:**

Large floating abandoned, lost or discarded fishing gear (ALDFG) is frequent marine pollution in the Hawaiian Islands and Palmyra Atoll.

Royer, S., Corniuk, R., McWhirter, A., Lynch IV, H.W., Pollack, K., **O'Brien, K.**, Escalle, L., Stevens, K.A., Moreno, G., Lynch, J.M.

(November 2023) Marine Pollution Bulletin: <https://doi.org/10.1016/j.marpolbul.2023.115585>

Coral cover remains suppressed three years after derelict net removal in a remote shallow water coral reef ecosystem.

Halperin, A., Lichowski, F., **Morioka, J.**, **O'Brien, K.**, Suka, R., Huntington, B.

(February 2023) Marine Pollution Bulletin: <https://doi.org/10.1016/j.marpolbul.2023.114703>

Movement and retention of derelict fishing nets in Northwestern Hawaiian Island reefs.

McCoy, K., Huntington, B., Kindinger, T., **Morioka, J.**, **O'Brien, K.**

(January 2022) Marine Pollution Bulletin: <https://doi.org/10.1016/j.marpolbul.2021.113261>  
<https://www.sciencedirect.com/science/article/pii/S0025326X21012959>

Successful application of a novel technique to quantify negative impacts of derelict fishing nets on Northwestern Hawaiian Island reefs.

Suka, R., Huntington, B., **Morioka, J.**, **O'Brien, K.**, Acoba, T.

(August 2020) Marine Pollution Bulletin: <https://doi.org/10.1016/j.marpolbul.2020.111312>  
<https://www.sciencedirect.com/science/article/abs/pii/S0025326X20304306>

Building evidence around ghost gear: Global trends and analysis for sustainable solutions at scale.

Richardson, K., Asmutis-Silvia, R., Drinkwin, J., Gilardi, K.V.K., Giskes, I., Jones, G., **O'Brien, K.**, Pragnell-Raasch, H., Ludwig, L., Antonelis, K., Barco, S., Henry, A., Knowlton, A., Landry, S., Mattila, D., MacDonald, K., Moore, M., Morgan, J., Robbins, J., van der Hoop, J., Hogan, E.

(January 2019) Marine Pollution Bulletin: <https://doi.org/10.1016/j.marpolbul.2018.11.031>

**The following publications are referenced throughout the document and are related to the proposed project:**

Marine debris accumulation in the Northwestern Hawaiian Islands: An examination of rates and processes.

Dameron, O.J., Parke, M., Albins, M., Brainard, R.

(May 2007) Marine Pollution Bulletin: <https://doi.org/10.1016/j.marpolbul.2006.11.019>

Benefits derived from opportunistic survival-enhancing interactions for the Hawaiian monk seal: the silver BB paradigm.

(September 2014) Endangered Species Research: <https://doi.org/10.3354/esr00612>

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

11/5/2023

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



**Papahānaumokuākea Marine Debris Project (PMDP)**  
**Supplemental *Chondria tumulosa* and *Acanthophora spicifera* Biosecurity Plan**  
Updated 11/5/2023

**Permit:** TBD  
**PI:** James Morioka, Kevin O'Brien (Papahānaumokuākea Marine Debris Project, PMDP)  
**Type:** Conservation and Management -- New Application  
**Title:** Marine Debris Survey and Removal Operations

**To be filled in by agency representative**

Agency: DAR

**Decision:** 2. Reject plan and provide justification with recommendations on how to move forward (this could include, but not limited to, follow-up questions for the applicant, special permit conditions, or changes to the activity).

**Comments:**

DAR is in support of most aspects of this biosecurity plan but requests that any changes that have been proposed with bleaching methods be returned to the original bleaching/disinfection protocol that was approved for the 2023 PMDP biosecurity plan and permit, for any marine debris being removed from a NAMZ, until an effective alternate method can be determined.

DAR is not yet sure if the impacts would be mitigated to a level below significant (based on what is currently known about *C. tumulosa*), because there is risk in transporting a container back to the MHI with untreated nets from a NAMZ. Although it is recognized that the container has water-proofed seals on the bottom and sides, there is still risk that escapement of untreated *Chondria* could occur in the event that the top gets dislodged or the container tips over during vessel or truck transit. There are also current unknowns about the vectors for escapement during incineration at H-Power/Covanta; DAR is coordinating a tour for the end of November or the beginning of December to visit the facility and evaluate the site for these vectors.

DAR is supportive of collaborating with PMDP and the other MMB agencies to determine an alternate method as quickly as possible. The hazard of exposure to bleach during disinfection protocols and the hazard of the container potentially shifting or breaking free on the ship (due to weight shifts occurring from water movement inside the container), has been clearly communicated.

DAR is open to proceeding and collaborating to the extent possible with any type of trials that can be conducted in early winter / spring both on Oahu and Midway (if agreed to) to test either heat treatments, desiccation, 3% bleach treatments or other potential methods, in order to determine an alternate method as quickly as possible, and is open to amending the current method as soon as an effective alternative method can be determined.

**OUTLINE**

*Important notes about PMDP marine debris removal operations.....pg. 3*

**Standard marine debris survey, removal, transport, and disposal protocols at **Non-NAMZ****

*Island/atoll: Lalo (French Frigate Shoals), Kamokuokamohoali'i (Maro Reef), Kamole (Laysan), Kapou (Lisianski)*

**SOP: In-water marine debris (ghost net) survey and removal protocols ..... pg. 4**

**SOP: In-water marine debris (ghost net) transport and disposal protocols ..... pg. 5**

**SOP: Shoreline marine debris (ghost net and plastic) survey and removal protocols ..... pg. 6**

**SOP: Shoreline marine debris (ghost net and plastic) transport and disposal protocols ..... pg. 7**

**Standard marine debris survey, removal, transport, and disposal protocols at **NAMZ****

*Island/atoll: Manawai (Pearl and Hermes Atoll), Kuaihelani (Midway Atoll), Hōlanikū (Kure Atoll)*

**SOP: In-water marine debris (ghost net) survey and removal protocols at NAMZ.....pg. 8**

**SOP: In-water marine debris (ghost net) transport and disposal protocols at NAMZ ..... pg. 9**

**SOP: Shoreline marine debris (ghost net and plastic) survey and removal protocols at NAMZ ..... pg. 10**

**SOP: Shoreline marine debris (ghost net and plastic) transport and disposal protocols at NAMZ ..... pg. 11**

**Standard marine debris survey, removal, transport, and disposal protocols at **Kuaihelani****

*Specific protocols for fly-in shore-based mission at Kuaihelani (Midway Atoll)*

**SOP: Shoreline marine debris (ghost net and plastic) survey and removal protocols at NAMZ.....pg. 12**

**SOP: Shoreline marine debris (ghost net and plastic) transport and disposal protocols at NAMZ ..... pg. 13**

**Appendix – Photos of marine debris removal and storage gear ..... pg. 14-16**

### **Important Notes about PMDP Marine Debris Removal Operations**

The Papahānaumokuākea Marine Debris Project (PMDP) is proposing to conduct marine debris removal operations in 2024 at the following Nuisance Algae Mitigation Zones (NAMZ) and non-NAMZ islands and atolls within the Papahānaumokuākea Marine National Monument (PMNM):

- **NAMZ Islands and Atolls:**
  - Manawai (Pearl and Hermes Atoll)
  - Kuaihelani (Midway Atoll)
  - Hōlanikū (Kure Atoll)

Please refer to “**Standard marine debris survey, removal, transport, and disposal protocols at NAMZ**” on pg. 8-11 for operational details. All NAMZ specific actions are in red text.

- **Non-NAMZ Islands and Atolls:**
  - Lalo (French Frigate Shoals)
  - Kamokuokamohoali’i (Maro Reef)
  - Kamole (Laysan)
  - Kapou (Lisianski)

No operations will be conducted at non-NAMZ locations after operations within a NAMZ.

#### **PMDP-2024-01 (Mission #1) – April 19 – May 3, 2024**

- Fly-in shore-based mission at Kuaihelani

Please refer to “**Standard marine debris survey, removal, transport, and disposal protocols at Kuaihelani**” on pg. 12-13 for operational details.

#### **PMDP-2024-02 (Mission #2) – August 3 – September 1, 2024**

- Ship-based mission at all islands and atolls within Papahānaumokuākea Marine National Monument

#### **PMDP-2024-03 (Mission #3) – September 10 – October 9, 2024**

- Ship-based mission at all islands and atolls within Papahānaumokuākea Marine National Monument

**Note:** If nuisance, pervasive, or invasive algae such as *Chondria tumulosa* and/or *Acanthophora spicifera* are discovered/identified at an island/atoll outside of known Nuisance Algae Mitigation Zones (NAMZ), the Permit Coordinator (Phillip Howard) and the Resource Protection Working Group (RPWG) will be notified immediately. If it is determined to be a nuisance algae, then operations within that location will be designated as part of the NAMZ and PMDP will implement all protocols for NAMZ marine debris removal operations.

**Standard Operating Procedure (SOP):**  
**In-water Marine Debris (Ghost Net) Survey and Removal Protocol at Non-NAMZ**

This SOP outlines the step-by-step process for assessing and removing ghost nets from the shallow-water coral reef environment. It considers various factors, including attachment, depth, potential wildlife entanglement risks, and the prevention of additional harm to the coral reef during the removal process.

**Survey and Removal:**

1. PMDP divers conduct a comprehensive survey of the shallow-water coral reef environment to locate ghost nets (abandoned, lost, or derelict fishing gear).
2. Determine whether the net is freely floating or attached to the substrate.
3. If the net is floating, proceed with removing the net from the water.
4. If the net is on or attached to the substrate, assess, and determine the estimated depth of the net.
5. If the net is deeper than 30 feet, adhere to PMDP dive protocols for marine debris removal operations and do not remove. Instead, implement the “left net” procedures, which involves marking the net’s location on the GPS, collecting data on the net and surrounding habitat, and estimating the depth of the net.
6. If the net is situated between 0 to 30 feet in depth, assess if any part of the net has become significantly attached (affixed, cemented, or calcified) to the reef substrate (i.e., coral is encapsulating or encrusting over the net), and consider whether the net is unlikely to move and if removal may cause further damage to the coral reef.
7. If no significant attachment is observed, and the net is likely to move, then remove the net.
8. If any part of the net has become significantly attached to the reef and is unlikely to move, further evaluate for entanglement hazards to Hawaiian monk seals, sea turtles, and other wildlife.
9. If there are no entanglement hazards, do not remove the net. Follow “left net” procedures, including marking the net’s location on the GPS, collecting data on the net and surrounding habitat, and estimating the percentage of the net removed.
10. If there are entanglement hazards, divers will carefully and precisely remove these hazards from the net while ensuring the stable portions remain affixed to the reef. This process should be executed with careful consideration for preventing additional damage to the surrounding corals and minimizing disturbance to wildlife.

**Standard Operating Procedure (SOP):**  
**In-water Marine Debris (Ghost Net) Transport and Disposal Protocol at Non-NAMZ**

This SOP outlines the step-by-step process for safely and efficiently handling ghost nets, from their removal from the reef to their final disposal.

**Transport and Disposal:**

1. Following the successful removal of the net from the coral reef, the PMDP boat team, composed of the coxswain and crew, manually hoist the freed net out of the water and into the deck of the small boat (PMDP's 19-ft inflatable boat). Divers provide assistance as needed, using pulling lines and manual effort. The boat's deck is equipped with a heavy-duty tarp and a helicopter sling cargo net to safely contain all marine debris.
2. After loading the net into the small boat, it is transported from the shallow coral reef environment to the larger support vessel (ship).
3. Upon arrival at the ship, the small boat is securely moored to the ship using lines.
4. The ship's crane operator operates the crane to lift the net, enclosed within the helicopter sling cargo net, out of the small boat.
5. The marine debris is suspended over the water (ocean) to allow for dripping, before being brought onto the deck of the ship.
6. Each load of net is weighed using a load-cell suspended from the ship's crane on deck.
7. After weighing, each load of net is emptied into custom PMDP marine debris storage bins. These bins are designed to be watertight, drainable, and craneable, with a maximum capacity of 30,000 pounds of net each.
8. The nets remain stored within the marine debris bins until the ship returns to Honolulu.
9. Once in Honolulu, each marine debris bin is craned off the ship wholesale and onto the dock using a dockside crane.
10. Once on the dock, the bin is covered with a custom tarp and loaded onto a truck for transportation to H-Power/Covanta Energy for unloading and direct incineration of the nets.
11. The empty marine debris storage bins are transported to PMDP in Kailua, Hawaii, where they undergo thorough cleaning, maintenance, and storage in preparation for future missions.



**Standard Operating Procedure (SOP):**  
**Shoreline Marine Debris (Ghost Net and Plastic) Survey and Removal Protocol at Non-NAM2**

This SOP outlines the step-by-step process for assessing and removing marine debris (including ghost nets and plastics) from the shoreline environment.

**Survey and Removal:**

1. PMDP teams conduct surveys of the shoreline environment to identify and locate various types of marine debris, including ghost nets (abandoned, lost, or derelict fishing gear), entanglement hazards, ocean plastics, and other debris.
2. Evaluate whether the marine debris poses a threat to wildlife.
3. If the marine debris is deemed a threat to wildlife, proceed with its removal.
4. PMDP teams carefully cut and manually transport the marine debris to the nearest accessible small boat entry point along the shoreline. This process should be executed with great care to avoid causing additional damage to the surrounding habitat and to minimize any disturbance to wildlife.
5. Once the marine debris is staged at a designated pick-up point, it is separated into two categories: nets and non-nets.
6. The nets are manually loaded into the small boat, whose deck is equipped with a heavy-duty tarp and a helicopter sling cargo net to safely contain all the marine debris.
7. The non-nets are placed into supersacks onshore. When the supersacks reach full capacity, they are securely tied shut and manually transported over the water by the team and into the deck of the small boat.

**Standard Operating Procedure (SOP):**  
**Shoreline Marine Debris (Ghost Net and Plastic) Transport and Disposal Protocol at Non-NAMZ**

This SOP outlines the step-by-step process for safely and efficiently handling shoreline marine debris, from their removal from the shoreline to their final disposal.

**Transport and Disposal:**

1. Once the marine debris is loaded into the small boat, it is transported from the shoreline to the larger support vessel (ship).
2. Upon arrival at the ship, the small boat is securely moored to the ship using lines.
3. The ship's crane operator operates the crane to lift the supersacks or helicopter sling cargo nets, which contain the marine debris, out of the small boat.
4. The marine debris is brought onto the ship's deck.
5. Each load (supersack or helicopter sling cargo net load) is weighed using a load-cell suspended from the ship's crane on deck.
6. After weighing, the marine debris from the helicopter sling cargo nets is emptied into custom PMDP marine debris storage bins. These bins are designed to be watertight, drainable, and craneable, with a maximum capacity of 30,000 pounds of net each.
7. The supersacks are craned onto the aft deck of the ship and secured for transport back to Honolulu.
8. Once in Honolulu, each marine debris bin is craned off the ship wholesale and onto the dock using a dockside crane.
9. Each supersack is craned off the ship using the ship's crane into roll-off containers on the dock.
10. On the dock, the bins and roll-off containers are loaded onto a truck for transportation to H-Power/Covanta Energy for unloading and direct incineration of the debris.
11. The empty marine debris storage bins are transported to PMDP in Kailua, Hawaii, where they undergo thorough cleaning, maintenance, and storage in preparation for future missions.

**Standard Operating Procedure (SOP):  
In-water Marine Debris (Ghost Net) Survey and Removal Protocol at NAMZ**

This SOP outlines the step-by-step process for assessing and removing ghost nets from the shallow-water coral reef environment at NAMZs. It considers various factors, including attachment, depth, potential wildlife entanglement risks, the spread of nuisance algae, and the prevention of additional harm to the coral reef during the removal process.

**Survey and Removal:**

1. PMDP divers conduct a comprehensive survey of the shallow-water coral reef environment to locate ghost nets (abandoned, lost, or derelict fishing gear).
2. Determine whether the net is freely floating or attached to the substrate.
3. If the net is floating, examine the net for nuisance algae.
4. If the net has the presence of nuisance algae, do not remove.
5. If the net is free of nuisance algae, proceed with removing the net from the water.
6. If the net is on or attached to the substrate, assess, and determine the estimated depth of the net and examine the net and surrounding habitat for nuisance algae.
7. If the net is deeper than 30 feet, adhere to PMDP dive protocols for marine debris removal operations and do not remove. Instead, implement the “left net” procedures, which involves marking the net’s location on the GPS, collecting data on the net and surrounding habitat, and estimating the depth of the net.
8. If the net is situated between 0 to 30 feet in depth, assess the net and surrounding habitat for nuisance algae.
9. If nuisance algae are present on the net or surrounding habitat, do not remove it. Instead, implement the “left net” procedures, which involves marking the net’s location on the GPS, collecting data on the net and surrounding habitat, and marking this location for nuisance algae.
10. If neither the net nor surrounding habitat has nuisance algae, then assess whether the net has become significantly attached (affixed, cemented, or calcified) to the reef substrate (i.e., coral is encapsulating or encrusting over the net), consider whether the net is unlikely to move and if removal may cause further damage to the coral reef.
11. If no significant attachment is observed, and the net is likely to move, then remove the net.
12. If any part of the net has become significantly attached to the reef and is unlikely to move, further evaluate for entanglement hazards to Hawaiian monk seals, sea turtles, and other wildlife.
13. If there are no entanglement hazards, do not remove the net. Follow “left net” procedures, including marking the net’s location on the GPS, collecting data on the net and surrounding habitat, and estimating the percentage of the net removed.
14. If there are entanglement hazards, divers will carefully and precisely remove these hazards from the net while ensuring the stable portions remain affixed to the reef. This process should be executed with careful consideration for preventing additional damage to the surrounding corals and minimizing disturbance to wildlife.

**Standard Operating Procedure (SOP):  
In-water Marine Debris (Ghost Net) Transport and Disposal Protocol at NAMZ**

This SOP outlines the step-by-step process for safely and efficiently handling ghost nets at NAMZs, from their removal from the reef to their final disposal.

**Transport and Disposal:**

1. Following the successful removal of the net from the coral reef, the PMDP boat team, composed of the coxswain and crew, manually hoist the freed net out of the water and into the deck of the small boat (PMDP's 19-ft inflatable boat). Divers provide assistance as needed, using pulling lines and manual effort. The boat's deck is equipped with a heavy-duty tarp and a helicopter sling cargo net to safely contain all marine debris.
2. After loading the net into the small boat, it is transported from the shallow coral reef environment to the larger support vessel (ship).
3. Upon arrival at the ship, the small boat is securely moored to the ship using lines.
4. The ship's crane operator operates the crane to lift the net, enclosed within the helicopter sling cargo net, out of the small boat.
5. The marine debris is suspended over the water (ocean) to allow for dripping, before being brought onto the deck of the ship over a nuisance algae catchment runway (tarp with raised lips).
6. Each load of net is weighed within the catchment area using a load-cell suspended from the ship's crane on deck.
7. After weighing, each load of net is emptied into custom PMDP marine debris storage bins. The bottom of these bins will be lined with concentrated bleach pucks. These bins are designed to be watertight, drainable, and craneable, with a maximum capacity of 30,000 pounds of net each.
8. The nuisance algae catchment runway, deck, small boat, equipment, and supplies are treated for nuisance algae strictly adhering to BMP #020.
9. The nets remain stored within the marine debris bins until the ship returns to Honolulu.
10. Each marine debris bin is craned off the ship wholesale and onto the dock using a dockside crane.
11. Once on the dock, the bin is covered with a custom tarp and loaded onto a truck for transportation to H-Power/Covanta Energy for unloading and direct incineration of the nets.
12. The empty marine debris storage bins are transported to PMDP in Kailua, Hawaii, where they undergo thorough nuisance algae treatment, cleaning, maintenance, and storage in preparation for future missions.

**Commented [GCA1]:** DAR requests that the original bleaching/disinfection protocol approved for the 2023 PMDP biosecurity plan and permit be implemented until an effective alternate method can be determined

**Commented [JMM2R1]:** Understood.

**Standard Operating Procedure (SOP):**  
**Shoreline Marine Debris (Ghost Net and Plastic) Survey and Removal Protocol at NAMZ**

This SOP outlines the step-by-step process for assessing and removing marine debris (including ghost nets and plastics) from the shoreline environment at NAMZs.

**Survey and Removal:**

1. PMDP teams conduct surveys of the shoreline environment to identify and locate various types of marine debris, including ghost nets (abandoned, lost, or derelict fishing gear), entanglement hazards, ocean plastics, and other debris.
2. Evaluate whether the marine debris has nuisance algae and if it poses a threat to wildlife.
3. If the marine debris or surrounding habitat has nuisance algae, do not remove. Mark its location on the GPS whenever possible.
4. If the marine debris does not have nuisance algae and is deemed a threat to wildlife, proceed with its removal.
5. PMDP teams will carefully cut and manually transport the marine debris to the nearest accessible small boat entry point along the shoreline. This process should be executed with great care to avoid causing additional damage to the surrounding habitat and to minimize any disturbance to wildlife.
6. Once the marine debris is staged at a designated pick-up point, it is separated into two categories: nets and non-nets.
7. All marine debris (separated as nets and non-nets) is double bagged, placed into two supersacks (double containment).
8. When the supersacks reach full capacity, they are securely tied shut and manually transported over the water by the team and into the deck of the small boat.

**Standard Operating Procedure (SOP):  
Shoreline Marine Debris (Ghost Net and Plastic) Transport and Disposal Protocol at NAMZ**

This SOP outlines the step-by-step process for safely and efficiently handling shoreline marine debris at NAMZs, from their removal from the shoreline to their final disposal.

**Transport and Disposal:**

1. Once the double supersacks are loaded into the small boat, it is transported from the shoreline to the larger support vessel (ship).
2. Upon arrival at the ship, the small boat is securely moored to the ship using lines.
3. The ship's crane operator operates the crane to lift the supersacks, which contain the marine debris, out of the small boat.
4. The supersacks (marine debris) are brought onto the ship's deck over a nuisance algae catchment runway (tarp with raised lips).
5. Each load (supersack or helicopter sling cargo net load) is weighed within the catchment area using a load-cell suspended from the ship's crane on deck.
6. After weighing, the supersacks are craned onto the aft deck of the ship and secured for transport back to Honolulu.
7. The nuisance algae catchment runway, deck, small boat, equipment, and supplies are treated for nuisance algae strictly adhering to BMP #020.
8. Each supersack is craned off the ship using the ship's crane into roll-off containers on the dock.
9. On the dock, the roll-off containers are loaded onto a truck for transportation to H-Power/Covanta Energy for unloading and direct incineration of the debris.

**Commented [GCA3]:** DAR requests that the original bleaching/disinfection protocol that was approved for the 2023 PMDP biosecurity plan and permit, for any marine debris being removed from a NAMZ, be implemented until an effective alternate method can be determined

**Commented [JMM4R3]:** Understood.

**Standard Operating Procedure (SOP):**  
**Shoreline Marine Debris (Ghost Net and Plastic) Survey and Removal Protocol [at Kuaihelani](#)**

This SOP outlines the step-by-step process for assessing and removing marine debris (including ghost nets and plastics) from the shoreline environment [at Kuaihelani](#).

**Survey and Removal:**

1. PMDP teams conduct surveys of the shoreline environment to identify and locate various types of marine debris, including ghost nets (abandoned, lost, or derelict fishing gear), entanglement hazards, ocean plastics, and other debris.
2. Evaluate whether the marine debris **has nuisance algae** and if it poses a threat to wildlife.
3. **If the marine debris or surrounding habitat has nuisance algae, do not remove. Mark its location on the GPS whenever possible.**
4. If the marine debris **does not have nuisance algae** and is deemed a threat to wildlife, proceed with its removal.
5. PMDP teams carefully cut and manually transport the marine debris to the nearest accessible small boat entry point along the shoreline. This process should be executed with great care to avoid causing additional damage to the surrounding habitat and to minimize any disturbance to wildlife.
6. Once the marine debris is staged at a designated pick-up point, it is separated into two categories: nets and non-nets.
7. The nets are manually loaded into the small boat, whose deck is equipped with a heavy-duty tarp and a helicopter sling cargo net to safely contain all the marine debris.
8. The non-nets are placed into supersacks onshore. When the supersacks reach full capacity, they are securely tied shut and manually transported over the water by the team and into the deck of the small boat.

**Standard Operating Procedure (SOP):  
Shoreline Marine Debris (Ghost Net and Plastic) Transport and Disposal Protocol at Kuaihelani**

This SOP outlines the step-by-step process for safely and efficiently handling shoreline marine debris at Kuaihelani, from their removal from the shoreline to their final disposal.

**Transport and Disposal:**

1. Once the marine debris is loaded into the small boat, it is transported from the shoreline to the inner harbor at Sand Island, Kuaihelani.
2. Once inside the inner harbor at Sand Island, the small boat secures its position along the seawall by the boathouse in preparation for offloading.
3. The PMDP telehandler operator operates the telehandler to lift the supersacks or helicopter sling cargo nets, which contain the marine debris, out of the small boat.
4. Each load (supersack or helicopter sling cargo net load) is weighed using a load-cell suspended from the telehandler on the tarmac.
5. After weighing, the supersacks are transported to a designated drop-off area on the tarmac.
6. The marine debris from the helicopter sling cargo nets are emptied onto the tarmac area.
7. The small boats, equipment and supplies are treated for nuisance algae strictly adhering to BMP #020.
8. After appropriate desiccation at Kuaihelani (timeline TBD by MMB), the PMDP team will return via larger support vessel (ship) to pick-up all marine debris (nets and non-nets) staged at Kuaihelani, to transport back to Honolulu.
9. Nets are loaded loosely into PMDP's marine debris storage bins.
10. Non-nets contained in supersacks are craned onto the ship's aft deck.
11. Upon arrival in Honolulu, each marine debris bin is craned off the ship wholesale and onto the dock using a dockside crane.
12. Each supersack is craned off the ship using the ship's crane into roll-off containers on the dock.
12. On the dock, the bins and roll-off containers are loaded onto a truck for transportation to H-Power/Covanta Energy for unloading and direct incineration of the debris.
13. The empty marine debris storage bins are transported to PMDP in Kailua, Hawaii, where they undergo thorough nuisance algae treatment, cleaning, maintenance, and storage in preparation for future missions.

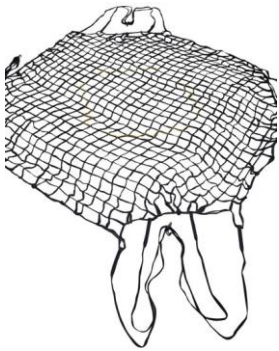
**Commented [GCA5]:** DAR requests that the original bleaching/disinfection protocol that was approved for the 2023 PMDP biosecurity plan and permit, for any marine debris being removed from a NAMZ, be implemented until an effective alternate method can be determined

**Commented [JMM6R5]:** Understood.



**Appendix 1-- Photos of Marine Debris Removal and Storage Gear**

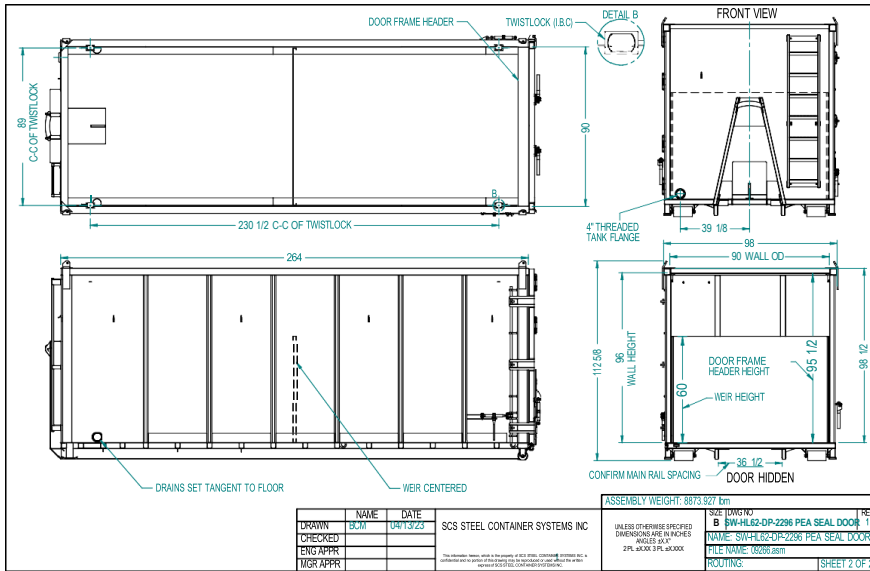
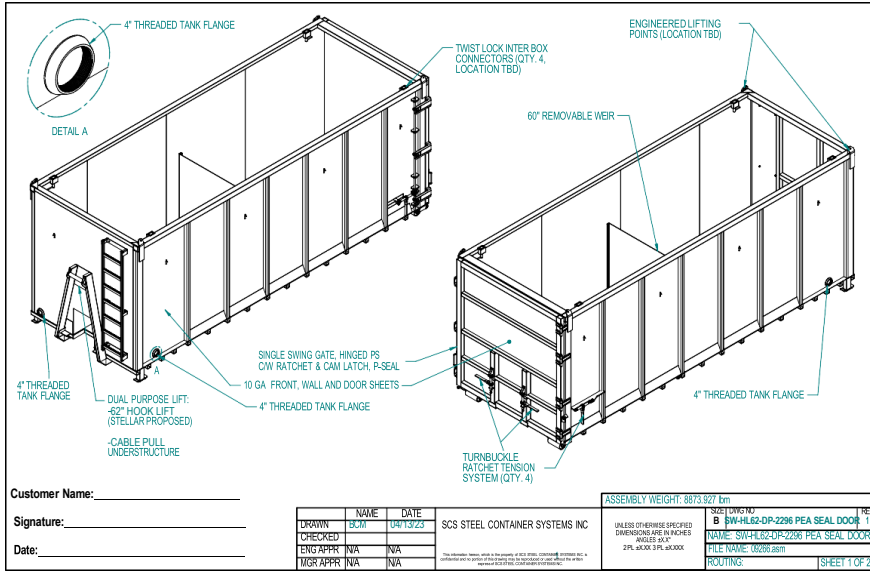
**Photo 1** -- Helicopter Sling Cargo Net



**Photo 2** -- Supersack



Photos 3 & 4 – Blueprints -- New, custom, watertight, drainable, and craneable PMDP marine debris storage bins (QTY: 3) (22-ft x 8-ft x 8.5-ft)



*Photos 5 & 6 – Photos – New, custom, watertight, drainable, and craneable PMDP marine debris storage bins (QTY: 3) (22-ft x 8-ft x 8.5-ft)*





**Papahānaumokuākea Marine Debris Project (PMDP)**  
**Supplemental *Chondria tumulosa* and *Acanthophora spicifera* Biosecurity Plan**

**Permit:** TBD  
**PI:** James Morioka, Kevin O'Brien (Papahānaumokuākea Marine Debris Project, PMDP)  
**Type:** Conservation and Management, Research, Education -- New Application  
**Title:** Marine Debris Survey and Removal Operations

**To be filled in by agency representative**

Agency: **Insert agency**

Decision: **(chose one of the options below)**

1. Approve plan as is. Assumption is that if a plan is approved, risk and impacts would be mitigated to a level below significant (based on what is currently known about *C. tumulosa*)
2. Reject plan and provide justification with recommendations on how to move forward (this could include, but not limited to, follow-up questions for the applicant, special permit conditions, or changes to the activity).
3. Reject plan and provide justification on why no recommendations can be made at this time to allow the application to move forward

Comments: **Insert in blank space below or provide via track changes**

**OUTLINE**

*IMPORTANT NOTES ABOUT PMDP MARINE DEBRIS REMOVAL OPERATIONS ..... pg. 3*

*STANDARD UNDERWATER MARINE DEBRIS (GHOST NET) REMOVAL PROTOCOLS ..... pg. 4*

***NON-CMZ: STANDARD MARINE DEBRIS (GHOST NET AND PLASTIC) SURVEY, REMOVAL, TRANSPORT AND DISPOSAL PROTOCOLS AT LĀLO (FRENCH FRIGATE SHOALS), KAMOKUOKAMOHOALI’I (MARO REEF), KAMOLE (LAYSAN), KAPOU (LISIANSKI), AND HŌLANIKŪ (KURE ATOLL)***  
***MISSION #1 – SCHEDULED FOR JULY 5 – AUGUST 3, 2023 ..... pg. 5-6***

***CMZ: MARINE DEBRIS (GHOST NET) SURVEY, REMOVAL, TRANSPORT AND DISPOSAL PROTOCOLS AT MANAWAI – PEARL AND HERMES ATOLL***  
***MISSION #2 – SCHEDULED FOR AUGUST 26 – SEPTEMBER 24, 2023 ..... pg. 7-9***

*PROPOSED ACTIVITIES THAT ARE WITHIN THE BOUNDS OF PMNM BMP (#020) – BEST MANAGEMENT PRACTICES (BMPs) TO MINIMIZE THE SPREAD OF CHONDRIA TUMULOSA ..... pg. 10*

*PROPOSED ACTIVITIES THAT DO NOT FALL WITHIN THE BOUNDS OF PMNM BMP (#020) – BEST MANAGEMENT PRACTICES (BMPs) TO MINIMIZE THE SPREAD OF CHONDRIA TUMULOSA ..... pg. 11*

*APPENDIX – PHOTOS OF MARINE DEBRIS REMOVAL AND STORAGE GEAR ..... pg. 12-14*

**IMPORTANT NOTES ABOUT PMDP MARINE DEBRIS REMOVAL OPERATIONS:**

The Papahānaumokuākea Marine Debris Project (PMDP) is proposing to conduct marine debris removal operations at the following CMZ (*Chondria* Mitigation Zones) and non-CMZ islands and atolls within the Papahānaumokuākea Marine National Monument (PMNM) in 2023:

- **Non-CMZ**
  - Lālo (French Frigate Shoals)
  - Kamokuokamohoali'i (Maro Reef)
  - Kamole (Laysan)
  - Kapou (Lisianski)
  - Hōlanikū (Kure Atoll)
- **CMZ**
  - Manawai (Pearl and Hermes Atoll) – LAST STOP before direct transit to Honolulu
  - No operations will be conducted at Kuaihelani (Midway Atoll) in 2023

**Mission #1 – July 5 – August 2, 2023**

- Lālo (opportunistic), Kamokuokamohoali'i, Kamole, Kapou, Hōlaniku

**Mission #2 – August 26 – September 22, 2023**

- Kamokuokamohoali'i (opportunistic), Kamole (opportunistic), Kapou (opportunistic), Hōlaniku (opportunistic), Manawai (LAST STOP)

**Note:** If nuisance/pervasive/invasive algae (i.e. *Chondria tumulosa* and/or *Acanthophora spicifera*) are discovered/identified at an island/atoll outside of known CMZs (Manawai and Kuaihelani), then that island/atoll will be considered the “LAST STOP” before direct transit back to Honolulu, and all marine debris (ghost nets) will follow “**CMZ: MARINE DEBRIS (GHOST NET) SURVEY, REMOVAL, TRANSPORT AND DISPOSAL PROTOCOLS**” (pg. 7-9).

**Disposal:**

- PMDP is currently developing new cutting tools which will allow divers to cut large net masses into sufficiently small enough chunks in the field to eliminate the need for additional post-mission cutting and processing at Schnitzer Steel Co.
- Therefore, PMDP will be able to transport the marine debris in the marine debris storage containers directly from the chartered vessel to H-Power/Covanta Energy for direct incineration.

PMDP divers will be properly trained in algae identification (including *Chondria tumulosa* and *Acanthophora spicifera*) by NOAA ONMS PMNM personnel prior to departure on Mission #1.

- PMDP divers (Kevin O'Brien and James Morioka) have helped properly identify several algal blooms to the MMB, including the discovery of *Chondria tumulosa* at Kuaihelani (Midway Atoll) in 2021.

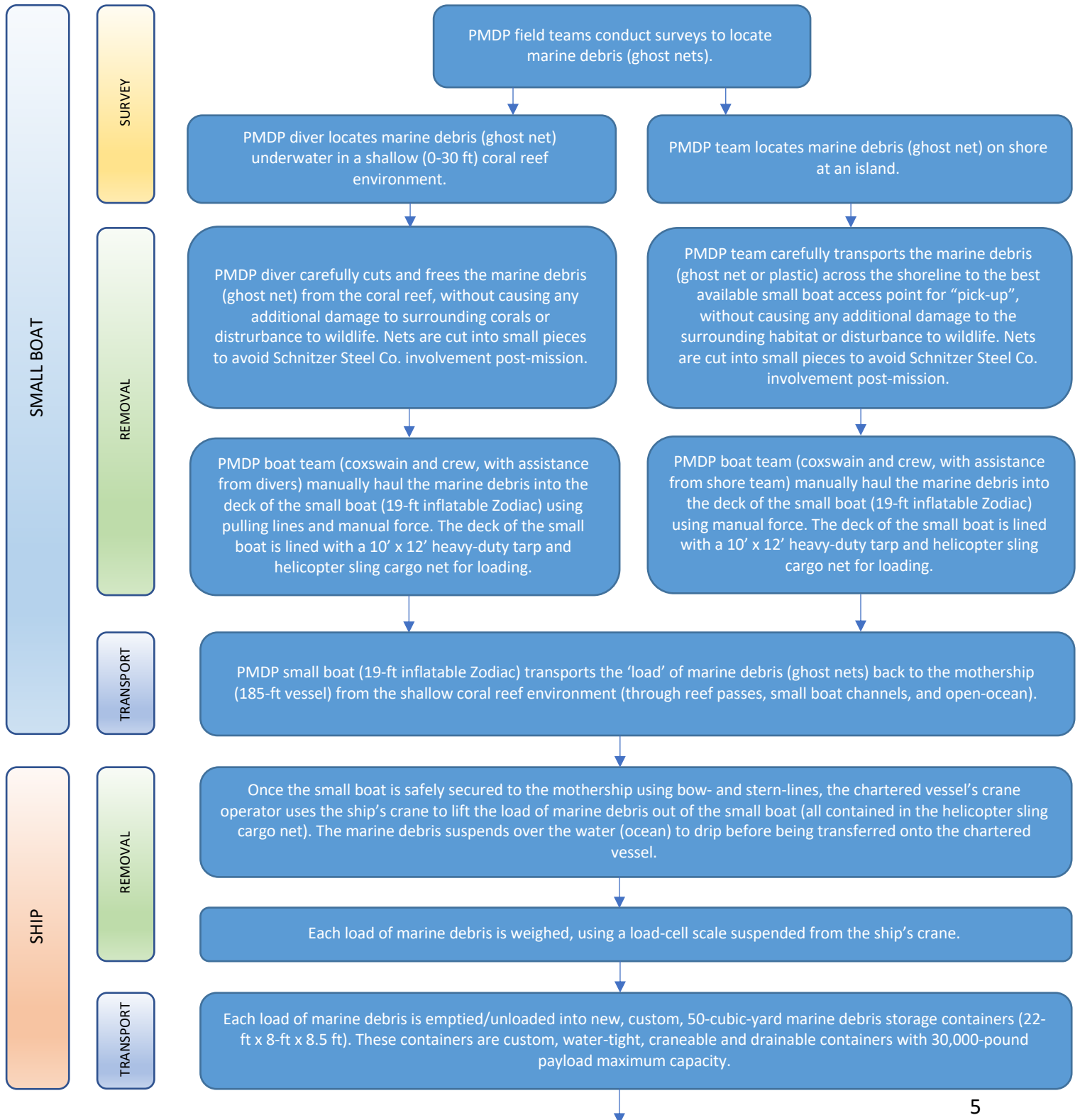
**STANDARD UNDERWATER MARINE DEBRIS (GHOST NET) REMOVAL PROTOCOLS**

The decision to remove marine debris (ghost nets) from the shallow-water (0-30 ft depth) coral reef environment is based upon its disposition, depth, and potential for additional damage and entanglement.



**NON-CMZ (CHONDRIA MITIGATION ZONE)**

**STANDARD MARINE DEBRIS SURVEY, REMOVAL TRANSPORT AND DISPOSAL PROTOCOLS  
AT LĀLO (FRENCH FRIGATE SHOALS), KAMOKUOKAMOHOALI'I (MARO REEF), KAMOLE (LAYSAN), KAPOU  
(LISIANSKI), AND HŌLANIKŪ (KURE ATOLL)  
MISSION #1 – JULY 5 – AUGUST 3, 2023**





SHIP

TRUCK

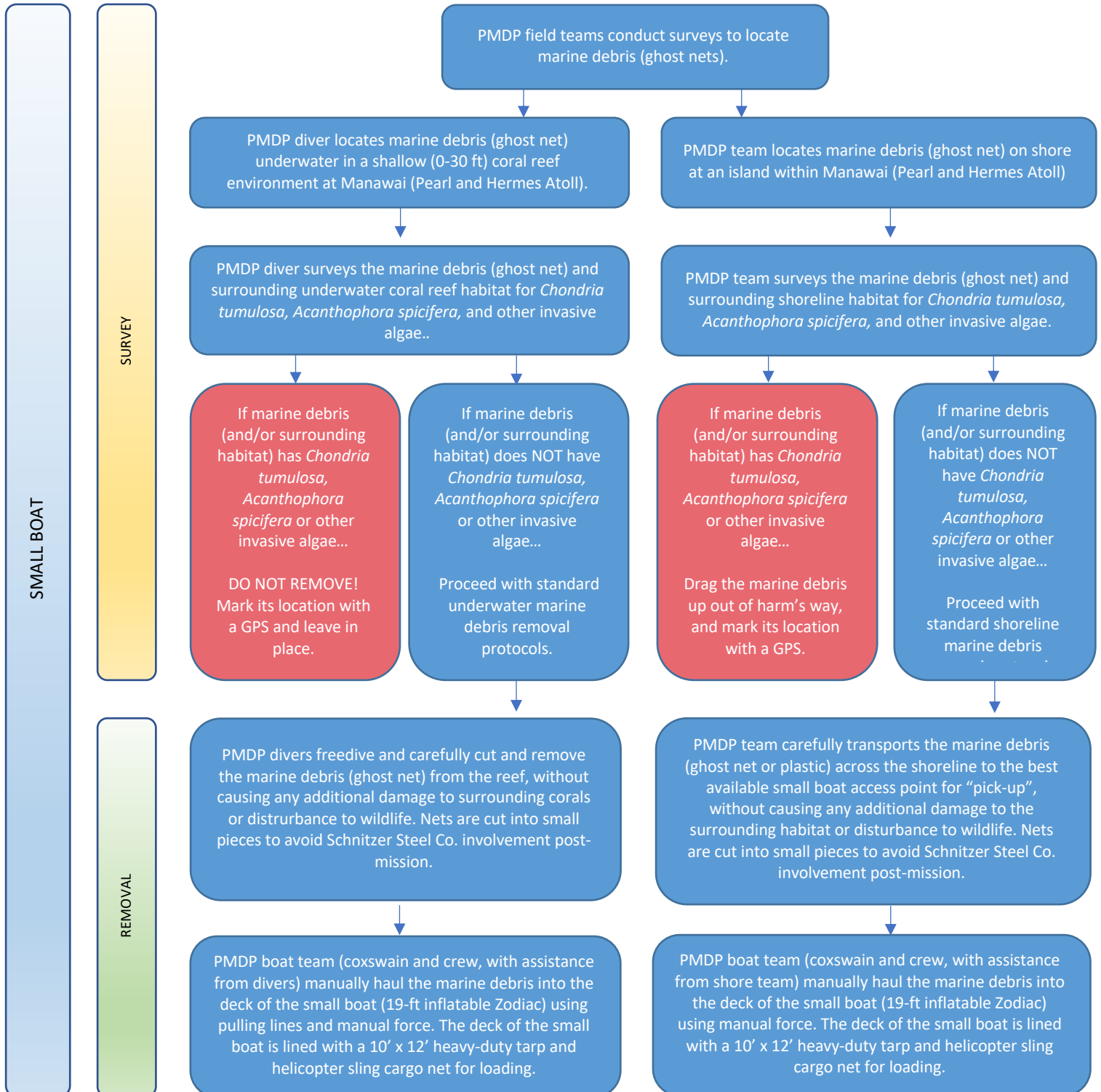
TRANSPORT

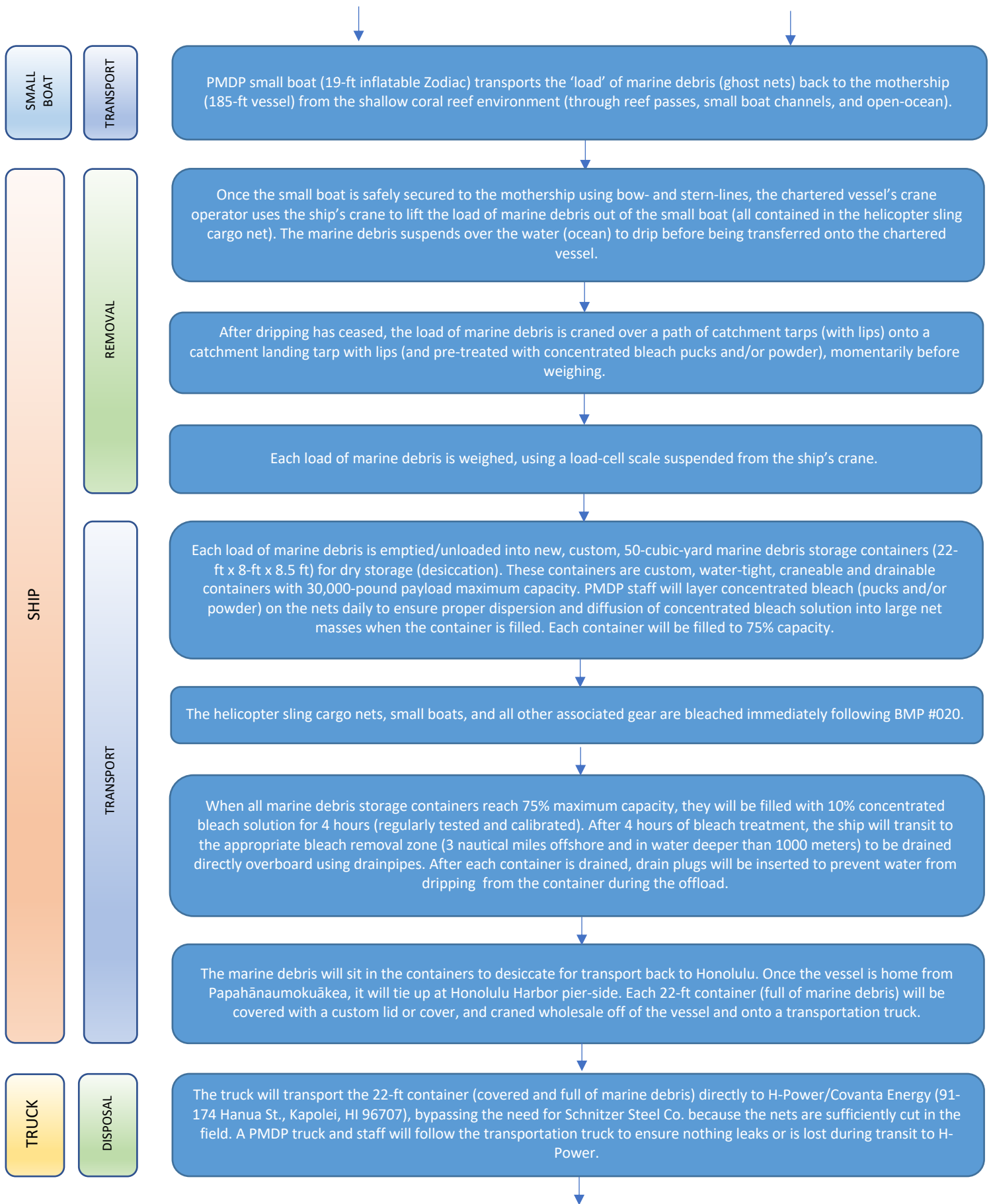
Once the vessel is home from Papahānaumokuākea, it will tie up at Honolulu Harbor pier-side. Each 22-ft container (full of marine debris) is covered with a custom lid and craned wholesale off of the vessel and onto a transportation truck.

The truck transports the 22-ft container (covered and full of marine debris) directly to H-Power/Covanta Energy (91-174 Hanua St., Kapolei, HI 96707), bypassing the need for Schnitzer Steel Co. because the nets are sufficiently cut in the field. A PMDP truck and staff will follow the transportation truck to ensure nothing leaks or is lost during transit to H-Power.

The truck transports the empty 22-ft container to PMDP Headquarters (905 Kalanianaʻole Hwy. #5017, Kailua, HI 96734) for proper cleaning, and disposal of scraps and sand.

**CMZ (CHONDRIA MITIGATION ZONE)**  
**MARINE DEBRIS SURVEY, REMOVAL, TRANSPORT AND DISPOSAL PROTOCOLS**  
**AT CMZs (CHONDRIA TUMULOSA AND ACANTHOPHORA SPICIFERA MITIGATION ZONES)**  
**MANAWAI (PEARL AND HERMES ATOLL)**  
**MISSION #2 – AUGUST 26 – SEPTEMBER 22, 2023**





TRUCK

DISPOSAL

The truck will transport the empty 22-ft container to PMDP Headquarters (905 Kalanianaʻole Hwy. #5017, Kailua, HI 96734) for proper bleach treatment, cleaning, and disposal of scraps and sand. The container and all of its components are dry-cleaned first, then treated with >10% bleach using a back-pack sprayer, then the container is rinsed and the sterilized/disinfected rinse water will be disposed through a hose directly into the sewer (or will be left to evaporate).

**PROPOSED ACTIVITIES THAT ARE WITHIN THE BOUNDS OF PMNM BMP #020**

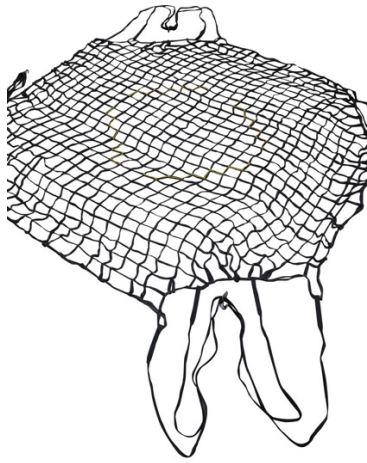
- Vessel access and operation within a CMZ:
  - All vessels (small boats) will be inspected and disinfected prior to departure (out of the water).
  - Large vessels (ship) will not anchor within a CMZ, however smaller vessels (small boats) will.
  - Vessels will not remain in contact with ocean water for more than 48 hours – will not require an antifouling paint.
  - No small boat or submerged equipment used within a CMZ will be used in the Monument or State of Hawaii waters for at least 30 days, even after disinfection protocols.
  - Small boat, motor, deck, and ground tackle (if utilized) will be visually inspected for algal fragments.
  - Inspections and removals of any algal fragments and other organisms from all vessels, gear, and equipment will occur at least daily (nightly).
  - Small boats staying within a CMZ will be hauled out of the water to reduce exposure time.
  - Felt-bottom footwear will not be used, to reduce exposure to and contamination by the nuisance alga or spores.
  - If personnel unexpectedly encounter *Chondria tumulosa* or *Acanthophora spicifera* outside a CMZ, the permittee (James Morioka) will notify their respective PMNM permit POC (Phillip Howard).
  
- Vessels (small boats) will not conduct activities with the Main Hawaiian Islands within 30 days after departing a CMZ.
  
- Measures for collection of biological samples within a *Chondria tumulosa* and *Acanthophora spicifera* CMZ:
  - There will be no intentional collections of *Chondria tumulosa*, *Acanthophora spicifera*, or other benthic samples, unless directed to do so by the MMB (if *Chondria tumulosa* or *Acanthophora spicifera* are discovered at another location).
  - No live specimens of *Chondria tumulosa* or *Acanthophora spicifera* will be transported outside a CMZ, unless directed to collect and transport by the MMB.
  - There are no research projects working with live *Chondria tumulosa* or *Acanthophora spicifera*.

**PROPOSED ACTIVITIES THAT *DO NOT* FALL WITHIN THE BOUNDS OF PMNM BMP #020**

- Marine debris collections and transport within a *C. tumulosa* Mitigation Zone (CMZ):
  - Manawai – Pearl and Hermes Atoll – Mission #2 – August 26 – September 22, 2023

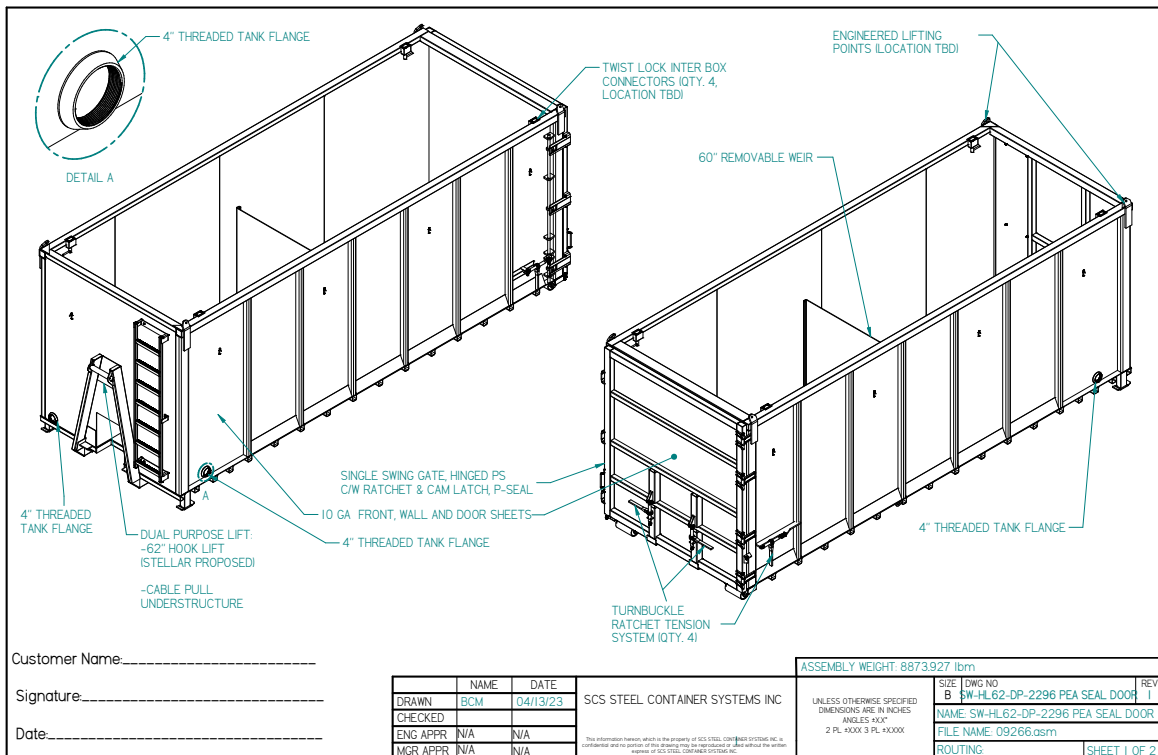
**APPENDIX – PHOTOS OF MARINE DEBRIS REMOVAL AND STORAGE GEAR**

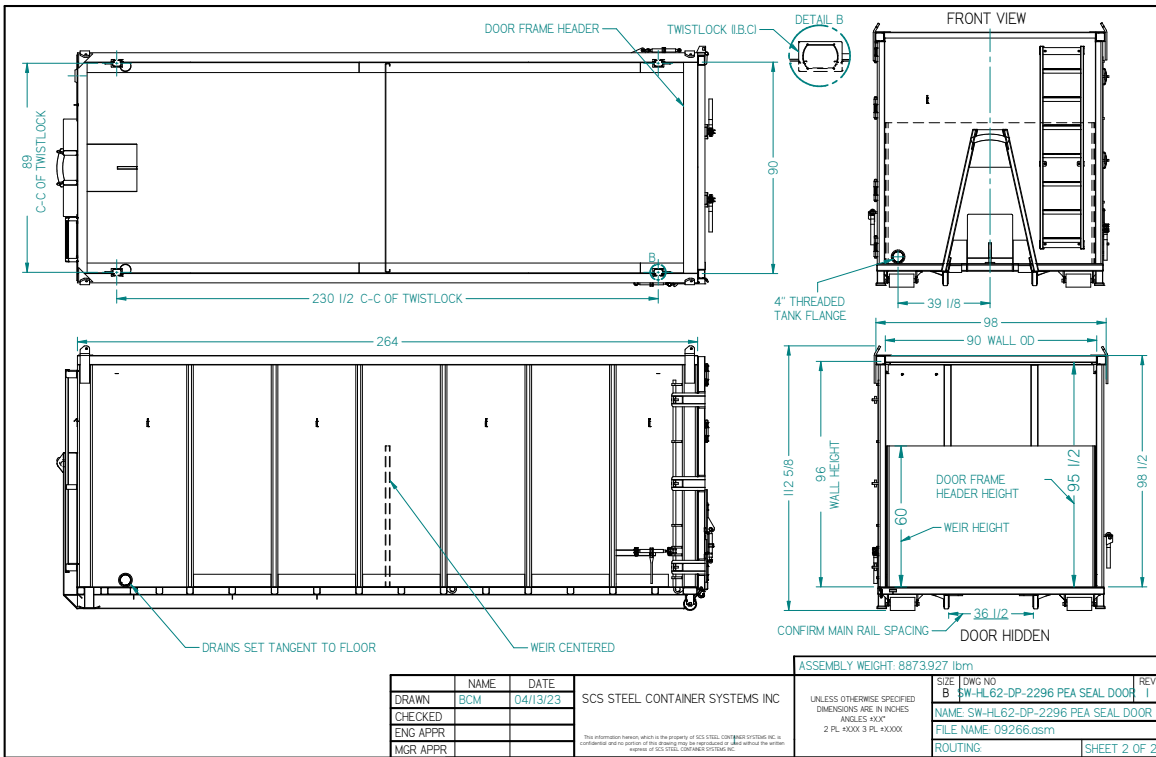
**PHOTO 1 -- Helicopter Sling Cargo Net**



**PHOTOS 2 & 3 – Blueprints -- New, custom, 50-cubic-yard marine debris storage containers (QTY: 3) (22-ft x 8-ft x 8.5-ft)**

**Expected delivery date: June 9, 2023.**





**PHOTOS 4 & 5** – Photos – New, custom, 50-cubic-yard marine debris storage containers (QTY: 3) (22-ft x 8-ft x 8.5-ft)

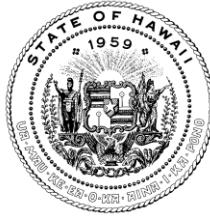






JOSH GREEN, M.D.  
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR |  
KA HOPE KIA'ĀINA



**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**

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RYAN K.P. KANAKA'OLE  
FIRST DEPUTY

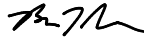
DEAN D. UYENO  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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COMMISSION ON WATER RESOURCE MANAGEMENT  
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CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

February 23, 2024

TO: Division of Aquatic Resources File

THROUGH: Dawn N. S. Chang, Chairperson

FROM: Brian J. Neilson, Administrator   
Division of Aquatic Resources

SUBJECT:

DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200.1 HAR, FOR A PAPAĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT CONSERVATION AND MANAGEMENT PERMIT TO MR. JAMES MORIOKA, PAPAĀNAUMOKUĀKEA MARINE DEBRIS PROJECT (PMDP) FOR ACCESS TO STATE WATERS TO SURVEY AND REMOVE MARINE DEBRIS AND DISENTANGLE MARINE LIFE AS NEEDED WITHIN THE WATERS OF THE NORTHWESTERN HAWAIIAN ISLANDS UNDER PERMIT PMNM-2024-003.

The following permitted activities are found to be exempted from preparation of an environmental assessment under the authority of Chapter 343, HRS and Chapter 11-200.1, HAR:

Project Title: Papahānaumokuākea Marine National Monument Conservation and Management Permit to Mr. James Morioka, Papahānaumokuākea Marine Debris Project (PMDP), for Access to State Waters to Survey and Remove Marine Debris and Disentangle Marine Life as Needed within the Waters of The Northwestern Hawaiian Islands.

Permit Number: PMNM-2024-003

Project Description: The Conservation and Management Permit, as described below, would allow entry and activities to occur in Papahānaumokuākea Marine National Monument for the purposes of large scale marine debris survey and removal operations, including the Northwestern Hawaiian Islands State Marine Refuge and the waters (0-3 nautical miles) surrounding the following sites:

- Lālo (French Frigate Shoals)

- Kamokuokamohoali'i (Maro Reef)
- Kamole (Laysan Island)
- Kapou (Lisianski Island)
- Manawai (Pearl and Hermes Atoll)
- Kuaihelani (Midway Atoll)
- Hōlanikū (Kure Atoll)

The activities covered under this permit would be authorized to occur via three separate missions, two cruises and one flight. The flight will be to Kuaihelani and back on April 19 and May 3, 2024, with gear traveling to Kuaihelani on M/V Imua February 1-14, 2024 and returning to Honolulu on the M/V Imua May 9-20, 2024. The first cruise will take place between August 3, 2024 and September 1, 2024. The second cruise will take place between September 10, 2024 and October 9, 2024. Expedition dates may vary if unforeseen interruptions or delays occur.

#### INTENDED ACTIVITIES

The proposed permit activities would allow for large scale marine debris survey and removal operations within Papahānaumokuākea Marine National Monument (Monument).

This permit is a renewal of PMNM permits issued in 2022 and 2023 (PMNM 2022-06 and 2023-05). New modifications/activities to 2024 permit application include the following: (1) Adding a third field mission this year, involving a fly-in and fly-out shore-based mission to Kuaihelani to address shoreline marine debris. (2) Incorporating the removal of large debris items such as buoys, derelict small boats, and other material. (3) Conducting surveys of Hawaiian monk seals and sea turtles, encompassing the capture and tagging weaned pups. (4) Utilizing Diver Propulsion Vehicle (DPV) surveys to aid in underwater detection of marine debris, enhancing operational efficiency and increasing marine debris removal. (5) Implementing traditional Native Hawaiian cultural protocols, including ho'okupu (offering) consisting of ti leaf and occasionally wai (freshwater) and pa'akai (salt).

The NOAA Northwestern Hawaiian Islands (NWHI) Marine Debris Project (hereinafter referred to as the 'Project') began in 1996 and was led by NOAA Fisheries and other agency partners through 2021. The Project has demonstrated over time the necessity of large-scale marine debris removal operations for the protection and safety of marine wildlife, specifically the endangered Hawaiian monk seal and threatened green sea turtle. Between 2015-2021, the Project was co-led and co-managed by James Morioka (Executive Director, Papahānaumokuākea Marine Debris Project (PMDP)), and Kevin O'Brien (President and Founder, PMDP), while still operating under NOAA, prior to the creation of PMDP in 2019. PMDP is proposing to lead the Project in the PMNM indefinitely, after partnering with NOAA, U.S. Fish and Wildlife Services (USFWS), and the State of Hawai'i Department of Land and Natural Resources (DLNR) on three successful field marine debris removal missions in 2020-2021 (operating under the Co-Trustee permit).

PMDP has independently orchestrated and executed four successful field missions in 2022 and 2023

under its own permit, successfully removing a cumulative weight of 202,950 pounds (101 tons) of marine debris in 2022 and 212,410 pounds (106 tons) in 2023. Looking ahead, PMDP envisions removing over 200,000 pounds (100 tons) of marine debris in 2024.

Specific objectives of the Papahānaumokuākea Marine Debris Project (PMDP) are as follows:

- Surveying for and removing derelict fishing gear (DFG) from shallow coral reef environments (0-30 ft depth) at Lālo (French Frigate Shoals), Kamokuokamohoali‘i (Maro Reef), Manawai (Pearl and Hermes Atoll), Kuaihelani (Midway Atoll), and Hōlanikū (Kure Atoll).
- Surveying for and removing DFG, plastics, and other entanglement hazards from shoreline habitats at Lālo (French Frigate Shoals), Kamole (Laysan Island), Kapou (Lisianski Island), Manawai (Pearl and Hermes Atoll), Kuaihelani (Midway Atoll), and Hōlanikū (Kure Atoll).
- Opportunistically removing large marine debris items such as buoys, derelict small boats, and other material.
- Evaluating the rates of marine debris accumulation and assessing its abundance and distribution on coral reefs and shorelines.
- Assessing ecological impacts of DFG on coral reef environments through photographic surveys.
- Disentangling protected wildlife, including Hawaiian monk seals, sea turtles, and sea birds, from marine debris when human intervention is necessary or possible.
- Conducting opportunistic surveys of Hawaiian monk seals and sea turtles, including capturing and tagging weaned Hawaiian monk seal pups when appropriate.
- Utilizing small Unmanned Aerial Systems (sUAS) surveys to enhance marine debris detection, thereby increasing operational efficiency, and assessing the abundance and distribution of marine debris on coral reefs and shorelines. Additionally, exploring a potential partnership with the University of Hawaii at Manoa to utilize sUAS surveys for quantifying and characterizing shoreline marine debris in PMNM.
- Utilizing Diver Propulsion Vehicle (DPV) surveys to aid in the detection of marine debris underwater, enhancing operational efficiency, and assessing the abundance and distribution of marine debris on coral reefs.
- Conducting Native Hawaiian cultural protocols to include ho‘okupu (offering) consisting of ti leaf and if permitted, wai (freshwater), pa‘akai (salt), ‘awa (dried Piper methysticum), kalo (taro), or ulu (breadfruit).

PMDP intends to film / photograph protected wildlife (including Hawaiian monk seals, sea turtles, and sea birds) interacting or being affected by the threats of marine debris, while strictly following all PMNM BMPs. All footage (film / photograph) will be provided to the four Co-Trustees (NOAA, U.S. Fish and Wildlife Service, State of Hawai‘i, Office of Hawaii Affairs) upon return from PMNM.

If protected wildlife are entangled in marine debris, PMDP will (if permitted as Co-Investigators on the NOAA National Marine Fisheries Services (NMFS) permits) work with partners at the NOAA Pacific Islands Fisheries Science Center (PIFSC) Protected Species Division (PSD), U.S. Fish and Wildlife Services and the State of Hawai‘i to assess the threat and mitigate hazards to the best of their ability. If seals or turtles become critically entangled, then PMDP personnel (trained with the NOAA NMFS PIFSC PSD) may intervene and prevent potentially fatal outcomes through disentanglement.

PMDP is also proposing to conduct Unmanned Aerial Systems (UAS, commonly referred to as ‘drones’) surveys of derelict fishing nets on coral reefs, using a Splash Drone 4 UAS (back-up UAS is the DJI Mavic Air Pro 2) (if permissible under current regulations). The study was piloted by the Project in 2018, mapping over 2 sq. km. of coral reef area (stitching hundreds of photographs to create a detailed mosaic) to detect derelict fishing nets on the reefs, and ground-truthing the imagery for nets with divers in the water. The Project demonstrated that the proof of concept for aerial net detection could be successful, and PMDP looks to capture more imagery so that artificial intelligence (AI) detection software used to detect derelict fishing nets on shallow water coral reef environments can be enhanced through machine-learning. As in previous years of the Project, the UAS will be operated by trained and certified staff, and all relevant PMNM BMPs and protocols specific to deployment, retrieval, and operations of the UAS will be followed. The UAS will be deployed and recovered from a small boat. The minimum altitude the UAS will fly over the reef or land is 100 ft and the maximum altitude will be 400 ft. Interactions with birds and other wildlife will be closely monitored and should significant interactions occur, UAS operations will be halted.

## **Purpose and Need**

The proposed activities would be in support of priorities identified in Monument management and recovery plans, included but not limited to: 1) Papahānaumokuākea Marine National Monument (PMNM) Management Plan (hereinafter referred to as the MMP) (specifically 3.3: Reducing Threats to Monument Resources – 3.3.1: Marine Debris (MD) Action Plan – “Reduce the adverse effects of marine debris to PMNM resources and reduce the amount of debris entering the North Pacific Ocean”), 2) Hawai‘i Marine Debris Action Plan (HI- MDAP), 3) Recovery Plan for the Hawaiian Monk Seal, 4) Mai Ka Po Mai: A Guidance Document for Papahānaumokuākea, 5) Endangered Species Act of 1973 (ESA) and 6) Marine Mammal Protection Act of 1972 (MMPA).

The Hawaiian Archipelago (specifically the PMNM) is centrally located within the world’s largest ocean gyre, the North Pacific Gyre and thus becomes a large depository for marine debris. The PMNM, a United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage Site, is home to more than 7,000 marine species, 25% of which are endemic, found only in the Hawaiian Archipelago. Marine debris and derelict fishing gear adversely affect the wildlife and habitats of the PMNM either by directly entangling or harming marine animals (seals, turtles, whales,

fish, and invertebrates) or adversely impacting corals via large nets rolling across fragile coral ecosystems. Additionally, there is a serious and growing concern for the entanglement of monk seals, particularly with no formal Project currently led by NOAA.

Papahānaumokuākea is deeply significant in the ancestry of Kānaka Maoli (Native Hawaiian people), representing an extension of their genealogy tracing back to the elemental energies that birthed the Pae ‘āina Hawai‘i (Hawaiian archipelago). Venturing into Papahānaumokuākea means reconnecting with Hawaiian ancestral ties, transitioning from Ao (light, day; the realm of humans) to Pō (dark, night; the realm of the gods). This place, frequented by kūpuna (elders) for thousands of years, holds profound cultural and genealogical significance, as reflected in the Kumulipo, a Hawaiian cosmogonical genealogy chant.

Since 1996, the Project and has conducted large-scale marine debris removals to mitigate the entanglement and ingestion threat to protected wildlife and damage to coral reefs and has successfully removed a total of 1,270 metric tons (2.8 million pounds) of marine debris from PMNM. PMDP supporting 364 metric tons or 802,000 pounds from 2020-2023. The Project and PMDP have also disentangled numerous marine animals. Of the estimated 1,500 remaining Hawaiian monk seals (which face the highest documented entanglement rate of any pinniped species), approximately 32% are alive today due to marine debris removal efforts, disentanglements, and rehabilitation endeavors (Harting et al., 2014).

## **Methods/Procedures:**

### In-Water Marine Debris Survey and Removal Operations:

Three methods are utilized for the in-water survey and removal of derelict fishing gear (DFG):

- **Tow-board Surveys:** Tow-board surveys, regularly referred to ‘manta tow’, allows for rapid visual surveys in shallow water (0-30 ft depth) and maximum area coverage. This method requires two divers to use breath-hold techniques while being towed behind a 19-ft inflatable boat at 1-2 knots across fringing, barrier, or back reefs.
- **Swim Surveys:** Swim surveys are primarily utilized within atoll lagoons around reticulated reefs or in areas which are too shallow or intricate to conduct tow-board operations effectively.
- **Diver Propulsion Vehicle (DPV) Surveys:** DPV assisted swim surveys may be utilized within atoll lagoons around reticulated reef areas to cover more reef area per unit of time, allowing for more marine debris to be removed from the environment.

For the methods detailed above, divers conduct surveys until DFG is visually located entangled on the reef. Once located, the net location (latitude and longitude), net characteristic (type, length, width, height, depth, foul level, coral growth) and habitat characterization data are collected. A debris removal decision-tree is then used to determine whether removal of the net is appropriate and will not cause additional damage to the reef. If removal is deemed appropriate, divers cut the DFG free from the substrate while minimizing impact to the entangled coral and surrounding reef habitat. Once the

DFG is free from the reef, it is loaded by hand into the inflatable boats for transport back to the ship (and ultimately transported back to Honolulu, HI for proper disposal).

Note: If the nuisance algae, *Chondria tumulosa*, is identified on the marine debris or in the nearby habitat (currently identified at Kuaihelani, Manawai, and Hōlanikū), its specific location within the atoll/island will be marked with a Global Positioning System (GPS) unit, and the marine debris will be left in place (pending further guidance from the MMB). Shoreline marine debris removal operations at islands/atolls with *Chondria tumulosa* will follow the strict Nuisance Algae BMP #020 and Supplemental Biosecurity Plans (attached).

#### Shoreline Marine Debris Survey and Removal Operations:

Shoreline Surveys: PMDP staff will walk the shorelines (between low-tide line and vegetation on shore) of the islands and atolls within PMNM to survey for and remove marine debris. The Project primarily focuses on surveying for and removing entanglement and ingestion hazards to wildlife. Once the marine debris is identified, collected, and staged at a ‘pick-up point’, the 19-ft. inflatable boats approach accessible shorelines to safely load with the marine debris to transport back to the ship (and ultimately transport back to Honolulu, HI for proper disposal).

#### Aerial Marine Debris Survey Operations:

Unmanned Aerial Systems (UAS) Surveys: UAS surveys are expected to take place at all islands/atolls (if permissible under current regulations) and deployed and retrieved from the inflatable boat. Strict UAS protocols and BMPs will be followed and enforced for aerial survey operations. Flights will take place between 100 ft. minimum (over land or reef) and 400 ft. maximum altitude (if permissible).

#### Wildlife Disentanglement Operations:

The Project often encounters marine wildlife entangled in marine debris. Marine wildlife in the PMNM are protected and managed by the State and Federal government, and are protected by laws, rules and regulation that prohibit the interaction and intervention with wildlife. If permitted, PMDP staff who are fully qualified, certified, and trained to handle, restrain, and disentangle marine wildlife will assess the situation and report its outcomes to the appropriate office for guidance and next steps.

- **Hawaiian Monk Seal Disentanglement Operations:** Hawaiian monk seals are often entangled in marine debris and require intervention and disentangling to allow for survival. If/when an entangled Hawaiian monk seal is identified, the PMDP staff will notify the NOAA NMFS PIFSC PSD Hawaiian Monk Seal Research Program (HMSRP) of the entangled seal. A full assessment of the seal’s health and surrounding habitat will be conducted and relayed to the HMSRP office. James Morioka (Executive Director, PMDP) is a professionally trained Hawaiian monk seal handler (worked for HMSRP 2011-2013) and has helped handle and/or disentangle dozens of seals in the PMNM. In collaboration with PMDP, James Morioka helped handle and disentangle two adult, female, Hawaiian monk seals in 2021. If permitted, James Morioka or other authorized persons on the NOAA NMFS Permit (Permit #22677), would lead a team to handle, restrain, and disentangled the endangered seal through: 1) manual restraint, 2) hoop-net restraint, or 3) stretcher-net restraint protocols and procedures.

- **Marine Turtle Disentanglement Operations:** Marine turtles are often entangled in marine debris, particularly in shallow water coral reef environments. If a turtle is entangled, the team will assess the turtle and its surrounding environment. If permitted, and the disentanglement scenario does not cause further risk to the staff and Project, the team will handle the turtle, holding its head above water so that it can breathe effectively, and complete their disentanglement.

Marine Debris Transport and Disposal:

Marine debris collected from within the Papahānaumokuākea Marine National Monument will be managed as follows (for more details, please refer to the Supplemental Biosecurity Plan):

1. All marine debris will be stored in PMDP’s specialized marine debris storage bins or placed in super sacks.
2. When derelict fishing nets are stored in PMDP’s marine debris storage bins, they will be cut to appropriate sizes in the field. These nets will remain contained in the bins until they arrive in Honolulu. Upon arrival, the marine debris storage bins will be craned off the ship wholesale and transported directly to either:
  - a. H-Power/Covanta Energy through Hawaii’s “Waste to Energy” initiative for direct incineration, or
  - b. Hawaii’s Department of Transportation “Nets to Roads” initiative, which is facilitated by Hawaii Pacific University’s Center for Marine Debris Research.
3. All other marine debris not stored in PMDP’s marine debris storage bins, primarily ocean plastics, will be stored in supersacks on the ship’s deck until they reach Honolulu. Upon arrival in Honolulu, this debris will be craned off the ship and placed in roll-off containers provided by Schnitzer Steel. These containers will then be transported to HPower/Covanta for incineration and disposal.

PMDP actively seeks innovative, alternative disposal methods for marine debris collected in the PMNM. An educational initiative, the Ocean Plastics Student Makerspace, has been established in collaboration with Le Jardin Academy, a high school located in Kailua, Hawaii. This project involves building small-scale recycling machines to shred, melt, and mold ocean plastics from PMNM into new products designed by students. The products created aim to raise awareness about the size and scale of the marine debris issue in PMNM and actively engage the local community in combating the problem in the Main Hawaiian Islands. While the volume of plastics processed through this method is limited, it’s important to note that the Hawai‘i Waste to Energy Partnership remains the primary disposal method for the majority of marine debris removed from PMNM.

**Collection of Specimens**



If the Monument Management Board (MMB) or Chondria Working Group request samples of *Chondria tumulosa* observed and collected in the field (either at established islands/atolls like Pearl and Hermes Atoll or Midway Atoll or newly established/discovered sites) for genetic testing, the specimens will go straight to the University of Hawai‘i at Manoa (in collaboration with the University of Charleston) for genetic sampling.

Whirlpack bags and containers for secondary containment will be used for collection and specimens will be preserved in the field (in-situ) as follows, and then transported back to Honolulu using the larger vessel, M/V Imua:

Four samples (4” x 4” x 4” sample, softball size):

1. Freeze (frozen as-is).
2. Salted fresh (salted with table salt as-is).
3. Ethanol (preserved in ethanol as-is).
4. Dried (dried at room temperature in the dark as-is).

#### ADHERANCE TO FINDINGS CRITERIA, BMPs, AND OTHER SAFETY PROTOCOLS:

##### Monument Management Plan Strategies

The activities proposed by the applicants directly support the Monument Management Plan (PMNM MMP Vol. 1, 2008), including but not limited to the following priority management needs:

- Strategy MD-1: Remove and prevent marine debris throughout the life of the plan:
  - Activity MD-1.1: Continue working with partners to remove marine debris in the Monument and reduce additional debris entering the Monument;
  - Activity MD-1.2: Catalog, secure, contain, and properly remove hazardous materials that wash ashore in the NWHI;
- Strategy MD-2: Investigate the sources, types, and accumulation rates of marine debris within 5 years;
  - Activity MD-2.1: Work with partners on marine debris studies;
  - Activity MD-2.2: Develop and standardize marine debris monitoring protocols for marine and terrestrial habitats;
- Strategy MD-3: Develop outreach materials regarding marine debris within 2 years.
  - Activity MD-3.1: Work with partners to continue to develop and implement an outreach strategy for marine debris.

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

- Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any

- living or nonliving Monument resource
- Anchoring a vessel
  - 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
  - Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

Throughout the duration of the Project, NOAA and PMDP have diligently crafted and refined protocols for surveying, mitigating, and removing marine debris, a critical threat to wildlife and vital habitats. While these operations carry the potential for negative impact on cultural and natural resources, NOAA previously conducted a Programmatic Environmental Assessment (PEA or EA) under the National Environmental Policy Act (NEPA), resulting in a Finding of No Significant Impact (FONSI) in June 2005 (valid indefinitely) for the Project. PMDP's operation strictly adheres to all existing NOAA protocols and procedures, ensuring the safe execution of the mission.

To safeguard Monument resources the applicants will abide by all PMNM Best Management Practices (BMPs) while conducting the aforementioned activities within PMNM including but not limited to the following: Marine Alien Species Inspection Standards for Maritime Vessels (PMNM BMP #001), Human Hazards to Seabirds Briefing (PMNM BMP #003), Best Management Practices for Boat Operations and Diving Activities (PMNM BMP #004), Protocol to Reduce Impact to the Laysan Finch (PMNM BMP #005), General Storage and Transport Protocols for Collected Samples (PMNM BMP #006), Best Management Practices for Terrestrial Biosecurity (PMNM BMP #007), Best Practices for Minimizing the Impact of Artificial Light on Sea Turtles (PMNM BMP #009), Marine Wildlife Viewing Guidelines (PMNM BMP #010), Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment (PMNM BMP #011), Precautions for Minimizing Human Impacts on Endangered Land Birds (PMNM BMP #012), Best Management Practices for Maritime Heritage Sites (PMNM BMP #017), Rodent Prevention and Inspection Standards for Permitted Vessels (PMNM BMP #018), Best Management Practices to minimize the spread of nuisance alga (BMP# 20).

For new and particularly sensitive activities, such as addressing a nuisance algal outbreak like *Chondria tumulosa* at Kuaihelani (Midway Atoll), Manawai (Pearl and Hermes Atoll), and Hōlanikū (Kure Atoll), the project will proactively communicate and collaborate with Monument partners, providing clear justification and the necessity for each activity.

PMDP has actively collaborated with the Native Hawaiian community and intends to continue this collaboration indefinitely. Specifically, PMDP has partnered with the Office of Hawaiian Affairs (OHA) and PMNM's Native Hawaiian Program Specialist Kalani Quiocho, to develop a culture-based strategy for the Project. This strategy aims to enhance inclusivity and collaboration with the Native Hawaiian community, facilitating access to the PMNM, creating culture-based outreach materials, and adhering to traditional protocols and procedures while in the field. The following

excerpt is included in the PMDP application: *Papahānaumokuākea epitomizes ‘āina momona (fat lands, fertile or rich lands). It serves as a tangible example of how the ‘āina should abundantly produce resources, holding immense cultural significance. From the perspective of a Kānaka Maoli worldview, understanding these mauka to makai (mountain to sea, land to ocean) connections is vital for indigenous knowledge. The flourishing ecosystems and habitats of Papahānaumokuākea act as a living testament, aiding in comprehending the stories, history, and relationships practiced by kūpuna (ancestors). It provides a living space for Kānaka Maoli to reconnect and expand upon cultural practices. The removal of marine debris becomes a crucial aid to safeguard, perpetuate, and enhance this special place, its ecosystem, and its cultural resources for future generations.*

### Compliance Information Form (CIS Form) Updates

Note – In previous years a Compliance Information Form (CIS Form) would have been included with BLNR submittal with various pieces of information on project personnel, vessels utilized to access the PMNM, vessel inspection dates and associated vessel details, entry dates into the PMNM, etc. This information is often fluid and changing and updated on a daily basis, and therefore partially complete forms were often included as an attachment for the BLNR meeting in past years. In 2023 a transition was made to storing this information on a dynamic google spreadsheet; static PDF copies will no longer be included with the BLNR submittal, but the information can be now provided upon request with the most up-to-date data as it is modified up until the departing of the vessel for the PMNM. Some preliminary information for this expedition is as follows – other info can be requested as described above (if necessary):

There will be a total of 23 individuals per cruise. Of the 23 individuals, 16 individuals (berthing limitations) will be from PMDP, and 7 individuals likely from Hawai‘i Resource Group (HRG, M/V Imua) for each of the proposed 30-day missions to the PMNM (August 3 – September 1, 2024 and September 10 – October 9, 2024). There will be a total of 12 PMDP staff for the 15-day land-based mission (April 19-May3, 2024). However, the actual individuals covered by this permit may exceed these totals, if there are staffing changes that occur due to scheduling conflicts between the two proposed missions. Updated data can be provided upon request.

### REVIEW PROCESS:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai‘i Division of Aquatic Resources, Hawai‘i Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application was posted on the Monument website in the fall of 2023, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument’s Public Notification Policy

### **MMB Agency Reviewer Questions and Applicant Responses:**

1. Requesting that any nets/debris that are left in place (b/c of the presence of nuisance algae) be consolidated/secured in whatever fashion possible to mitigate any entanglement hazards as best as possible, and to have the location and description of these objects provided to the managing agencies for tracking purposes.
  - a. Yes, we will do our best to minimize entanglement hazards in regards to marine debris found in the presence of nuisance algae. We will mark its location and can provide a description of these objects for tracking purposes.
2. DAR requested PMDP use the same bleaching process as last year (comments attached).
  - a. Yes, PMDP will revert back to 2023's approved biosecurity protocols for the 2024 marine debris missions at-sea.
3. Per the description of proposed activities on page 5 "Conducting opportunistic surveys of Hawaiian monk seals and sea turtles, including capturing and tagging weaned Hawaiian monk seal pups when appropriate", will PMDP technicians be trained by NMFS Hawaiian monk seal program staff on handling/tagging of seals and turtles or will J. Morioka be the sole permitted handler?
  - a. All other mention of Hawaiian monk seals in the permit refers to disentanglements. PMDP technicians are tentatively scheduled to train with CIMAR and NMFS in regards to handling/tagging seals and turtles. Currently, we have three personnel on our team qualified to lead Hawaiian monk seal handling and tagging (and have associated Co-investigator letters for Permit #22677).
4. Will collected uUAS footage be made available to partners interested in using the footage for other goals (e.g. monitoring for *Chondria tumulosa*; other future questions)?
  - a. Yes, all UAS footage can be made available to partners interested in the footage.
5. Will sUAS be flown over islands or solely over water? The permit application only mentions flights over water, but given the project timeline there will be likely active tern colonies on many of the islands which can be susceptible to disturbance by sUAS if not flown at appropriate heights AND speeds.
  - a. sUAS will be flown over islands and over water. Similar to last year, we will deploy our sUAS from the small boats or on shore, and will ensure our flights will be above 100 ft altitude to minimize disturbances to all wildlife.
6. When bringing nets back to the ship in NAMZ (nuisance algae mitigation zone), the protocol is to secure the small boat to the ship and crane off the marine debris (page 9 ). Bullet point 5 states that "The marine debris is suspended over the water (ocean) to allow for dripping, before

being brought onto the deck of the ship over a nuisance algae catchment runway (tarp with raised lips).” If there is the potential presence of a nuisance algae, allowing the net to drip over the ocean might spread the alga to new areas? The permit proceeds to say there is a special tarp, on the vessel to manage containment, so we were further confused as to why they would let the net drip into the ocean prior to loading.

- a. The rationale behind having our nets drip over the ocean was to absolutely minimize the chances of water making it onto the deck of the ship (larger support vessel). The nets are then craned over a “runway” and “catchment area” which are heavily bleached. The runway and catchment area will have lips to prevent wash over. If the RPWG would prefer we do not let the nets drip over the water, that would mitigate some hazards to personnel during craning operations.
7. What is the procedure if dangerous debris is entangled in/with the other debris? Such as what if munitions, like flares, are tangled in the debris? How is it retrieved from the water/debris? How is it stored, disposed of?
- a. We have not encountered dangerous debris entangled with other debris in our past. However, if it is, my instinct would tell me to leave it in place, mark its location, and relay the description to all pertinent personnel shore side.

Questions below refer to the Supplemental Biosecurity Plan

1. What constitutes “...surrounding habitat for nuisance algae” when determining removal of a net in a NAMZ?
  - a. The surrounding habitat encompasses the local reef on which the net is ensnared on. This typically covers both ends of an elongated reef, extending several hundred feet outwards, or the entire patch reef. If we happen to encounter nuisance algae during our search or survey of marine debris, it is protocol to mark its location as “nuisance algae zone”; and move on to another operational area (i.e. southwest backreef of Manawai near Seal-Kittery Island).
2. What bleach concentration will be achieved within the marine debris storage bins using bleach pucks for debris collected in NAMZ areas?
  - a. We will reach the same bleach concentration from last year’s protocol. Since we are reverting back to last year’s Biosecurity plan, we do not have intentions of lining the bottom of the containers with bleach pucks.
3. What does “thorough nuisance algae treatment” of empty marine debris bins in Kailua, HI involve?
  - a. Thorough nuisance algae treatment involves sweeping all remaining content (sand,

coral rubble, net fragments, etc.) into buckets and treating them with highly concentrated bleach for more than a week. Once all of the content is neutralized or sterilized, the contents are bagged and disposed of appropriately. Following the sweeping of the container, all walls (interior and exterior) are back-pack sprayed with highly concentrated bleach solution more than once, and left to soak. Then, the containers are wiped cleanly at a later date.

4. In areas with known occurrence of the invasive algae *Acanthophora spicifera* at Midway Atoll, (specifically the Rusty Bucket area of Sand Island), Midway will restrict small boat operations along the shoreline and instead suggest that debris collected in this area be transferred by vehicles.

a. Understood

#### ENVIRONMENTAL COMPLIANCE

NEPA / HEPA: (check-one)

- Categorical Exclusion / Exempt Class: 1 & 5
- EA
- EIS

Other Consultations: (ESA/MMPA Section 7; NHPA Section 106, etc.)

- An informal review of all aforementioned activities following section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA; 16 U.S.C. 1855(b)) was conducted. The outcome of this review may have required the applicant to adhere to other NMFS-prescribed conditions; such conditions would be reflected in the PMNM permit, prior to issuance.
- The proposed activities are covered under PMNM's programmatic ESA Section 7 informal consultation with National Marine Fisheries Service (NMFS). The outcome of this consultation may have required the applicant to adhere to other NMFS-prescribed conditions; such conditions would be reflected in the PMNM permit, prior to issuance.

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

If so, please summarize past permits:

Conservation and Management Permits (marine debris removal): PMNM 2022-06, 2023-05

Have there been any a) violations: Yes  No

b) Late/incomplete post-activity reports: Yes  No

Are there any other relevant concerns from previous permits? Yes  No

Consulted Parties: The permit application was sent out for review and comment to the following scientific and cultural entities: Hawaii Division of Aquatic Resources, Hawaii Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA). In addition, the permit application has been posted on the Monument Web site, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument’s Public Notification Policy.

Exemption Determination: After reviewing §11-200.1-15, HAR, including the criteria used to determine significance under §11-200.1-13, HAR, DLNR has concluded that the activities under this permit would have minimal or no significant effect on the environment and that issuance of the permit is categorically exempt from the requirement to prepare an environmental assessment based on the following analysis:

1. All activities associated with this permit have been evaluated as a single action. Since this permit involves an activity that is precedent to a later planned activity, i.e., the same methodology used throughout the permit period, the categorical exemption determination here will treat all planned activities as a single action under §11-200.1-10, HAR.
2. The General Exemption Type #1 for Operations, Repairs or Maintenance of Existing Structures, Facilities, Equipment, or Topographical Features, Involving Minor Expansion or Minor Change of Use Beyond That Previously Existing and The General Exemption Type #5 for Basic Data Collection, Research and Experimental Management with no Serious or Major Environmental Disturbance Appears to Apply. §11-200.1-16 (a) (1) and §11-200.1-16 (a) (2), HAR, exempts the class of actions that involve the “operations, repairs or maintenance of existing structures, facilities, equipment, or topographical features, involving minor expansion or minor change of use beyond that previously existing” and “basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource.” This exemption type has been interpreted to include activities related to the surveying and removal of marine debris, and disentanglement of marine wildlife, as needed and as described above.

The proposed activities here appear to fall squarely under the general exemption type identified under HAR §11-200.1-16 (a) (1) and §11-200.1-16 (a) (2), as described under the revised 2020 DLNR Exemption List (Concurred on by the Environmental Council on November 10, 2020), under the general exemption type #1 (Part 1), items #1, #2 and #31 and under the general exemption type #5 (Part 1), items #13 and #15 and (Part 2), item #4:

Type #1 (Part 1), items #1, #2 and #31, includes, respectively, the “removal of boulders, rocks, hazardous trees, marine debris, and other similar hazards necessary to maintain lands and waters in a safe condition” and the “rescue of threatened or endangered species”, and the removal and disposal of rubbish and debris from lands and waters”.

Type #5 (Part 1), items #13 and #15 and (Part 2), item #4, includes, respectively, “research that the Department declares is designed specifically to monitor, conserve, or enhance native species or native species' habitat”, “game and non-game wildlife surveys, vegetation and rare plant surveys, aquatic life surveys, inventory studies, new transect lines, photographing, recording, sampling, collection, culture, and captive propagation” and “experimental management actions that the Department declares are designed specifically to monitor, conserve, or enhance native species or native species' habitat.”

As discussed below, no significant disturbance to any environmental resource is anticipated. Thus, so long as the below considerations are met, the general exemption types should include the action now contemplated.

3. Cumulative Impacts of Actions in the Same Place and Impacts with Respect to the Potentially Particularly Sensitive Environment Will Not be Significant. Even where a categorical exemption appears to include a proposed action, the action cannot be declared exempt if “the cumulative impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment.” §11-200.1-15 (d), HAR. To gauge whether a significant impact or effect is probable, an exempting agency must consider every phase of a proposed action, any expected primary and secondary consequences, the long-term and short-term effects of the action, the overall and cumulative effect of the action, and the sum effects of an action on the quality of the environment. 11-200.1-13, HAR.

The applicant would abide by the PMNM Best Management Practices (BMPs) as listed in earlier section above while conducting the aforementioned activities within the PMNM. PMDP’s operation follows all existing NOAA protocols and procedures in place for this same Project when it was operated by NOAA (for which a Finding of No Significant Impact (FONSI) in June 2005 was determined), for the safe execution of the mission.

All Papahānaumokuākea Marine Debris Project (PMDP) activities proposed will be carried out with strict safeguards for the natural, cultural, and historic resources of the Monument as required by Presidential Proclamation 8031, and other applicable policies and standard operating procedures. All agencies will receive PMDP’s detailed field protocols and best management practices (BMP). These practices and procedures will minimize or avoid disturbance to wildlife, flora, habitat, and cultural and historic resources.

PMDP conducts rigorous PMNM (biological and environmental), ship, small boat, and freedive/snorkel operational training before conducting at-sea field operations. This training



regimen emulates the rigorous training that James Morioka (PMDP Executive Director) and Kevin O'Brien (PMDP President) led at NOAA for all field staff in preparation for field operations between 2007- 2021 and continued with PMDP in 2022 and 2023. This includes all marine debris removal activities, but also how to safeguard and minimize impacts to other natural and cultural resources. This will be further supported through PMNM pre-access and cultural briefings for all staff. In addition, James Morioka has conducted Resource Monitor duties on past expeditions; either this member of the personnel or another member of the personnel who has been trained in PMNM Resource Monitor duties will accompany all permitted activities to provide oversight and ensure compliance with permit conditions and BMPs.

Careful biosecurity quarantine procedures (outlined under PMNM BMP 007) will be followed and enforced at each island where personnel land on shore or boats and divers are put in the water. This includes use of gear purchased new and dedicated to each island/atoll. Thorough cleaning, biosecurity, and safe storage protocols are followed between field missions and adherence to biosecurity procedures outlined under PMNM BMP 020 is applied in water or zones where applicable.

Since no significant cumulative impacts or significant impacts with respect to any particularly sensitive aspect of the project area are anticipated, the categorical exemptions identified above should remain applicable.

4. Overall Impacts will Probably have a Minimal or No Significant Effect on the Environment. Any foreseeable impacts from the proposed activity will probably be minimal, and further mitigated by general and specific conditions attached to the permit. Specifically, all conservation and management activities covered by this permit will be carried out with strict safeguards for the natural, historic, and cultural resources of the Monument as required by Presidential Proclamation 8031, other applicable law and agency policies and standard operating procedures.

Conclusion. Upon consideration of the permit to be approved by the Board of Land and Natural Resources, the potential effects of the above listed project as provided by Chapter 343, HRS and Chapter 11-200.1 HAR, have been determined to be of probable minimal or no significant effect on the environment and exempt from the preparation of an environmental assessment.