



U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE/NOAA FISHERIES  
Pacific Islands Fisheries Science Center  
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### FINAL Project Instructions


**Date Submitted:** August 22, 2014

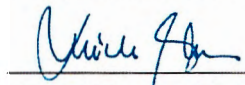
**Platform:** NOAA Ship *Oscar Elton Sette*

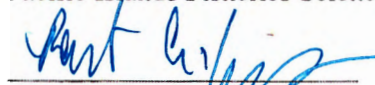
**Project Number:** SE-14-07 (OMAO)

**Project Title:** Marine Debris Survey and Removal in the Northwestern Hawaiian Islands (Papahānaumokuākea Marine National Monument)

**Project Dates:** September 25, 2014 to October 27, 2014

Prepared by:  Dated: 8/22/14  
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Approved by:  Dated: 9/9/14  
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Pacific Islands Fisheries Science Center

Approved by:  Dated: 17 SEP 2014  
Commander Robert A. Kamphaus, NOAA  
Commanding Officer  
Marine Operations Center – Pacific Islands



## **I. Overview**

### **A. Brief Summary and Project Period**

The NOAA Ship *Oscar Elton Sette* will be engaged as support for a Pacific Islands Fisheries Science Center (PIFSC), National Marine Fisheries Service (NMFS), NOAA, Marine Debris Project from September 25 to October 27, 2014 for a total of 33 sea days in the Papahānaumokuākea Marine National Monument (PMNM). Cruise schedule is based on speeds of 9.5 knots westbound and 9.0 knots eastbound.

### **B. Days at Sea (DAS)**

Of the 33 DAS scheduled for this project, 6 DAS are funded by an OMAO allocation and 27 DAS are Program funded. This project is estimated to exhibit a High Operational Tempo.

### **C. Operating Area (include optional map/figure showing op area)**

The operating area includes transit northwest along the main Hawaiian Islands and PMNM from Pearl Harbor, Hawai‘i to Midway Atoll, with marine debris operations occurring en route at French Frigate Shoals, Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Atoll, and at Midway Atoll (*Appendix 1*).

The Station/Waypoint List for the cruise will be presented with the final instructions (*Appendix 2*).

### **D. Summary of Objectives**

The NOAA ship *Oscar Elton Sette* will be engaged as support for a Coral Reef Ecosystem Division (CRED), Pacific Island Fisheries Science Center (PIFSC), National Marine Fisheries Service (NMFS), NOAA, Marine Debris project. The ship will support in-water and shoreline marine debris surveys and removal operations at French Frigate Shoals, Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Atoll, and Midway Atoll. The marine debris (primarily derelict fishing gear) collected during the *Oscar Elton Sette* marine debris survey and removal operations will be stored onboard until the vessel returns to Pearl Harbor, Hawai‘i for disposal.

While in transit shipboard 500 m conductivity-temperature-depth (CTD) casts and water samples will be conducted opportunistically at designated permanent stations along the Hawaiian Archipelago.

Oceanographic equipment including Ecological Acoustic Recorders (EARs), Sea Surface Temperature (SST) buoys, and Subsurface Temperature Recorders (STRs) will be opportunistically deployed, replaced, or removed within the PMNM.

**E. Participating Institutions**

- Joint Institute for Marine and Atmospheric Research (JIMAR)
- NOAA Pacific Islands Fisheries Science Center:
  - Coral Reef Ecosystem Division (CRED)
- NOAA Marine Debris Program (MDP)

**F. Personnel/Science Party: name, title, gender, affiliation, and nationality**

<b>Name (Last, First)</b>	<b>Title</b>	<b>Date Aboard</b>	<b>Date Disembark</b>	<b>Gender</b>	<b>Affiliation</b>	<b>Nationality</b>
Acoba, Tomoko	Data Manager	09/25/2014	10/27/2014	F	JIMAR	JPN (USA Perm. Resident)
Blinick, Naomi	Marine Debris Diver	09/25/2014	10/27/2014	F	JIMAR	USA
Burns, Michael	Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA
Garriques, Joao	Boat Lead / Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA
Goggins, Justin	Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA
Gray, Andrew	Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA
Knapstein, Rachel	Marine Debris Diver	09/25/2014	10/27/2014	F	JIMAR	USA
Koyanagi, Kyle	Media and Outreach	09/25/2014	10/27/2014	M	MDP	USA
Lichowski, Frances	Marine Debris Diver	09/25/2014	10/27/2014	F	JIMAR	GER (USA Perm. Resident)
Manuel, Mark	Chief Scientist / Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA
Morioka, James	Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA
Nordschow, Alexander	Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA
O'Brien, Kevin	Operations Lead / Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA
Parker, Dianna	Media and Outreach	09/25/2014	10/27/2014	F	MDP	USA
Reardon, Kerry	Marine Debris Diver	09/25/2014	10/27/2014	F	JIMAR	USA
Reardon, Russell	Boat Lead / Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA
Suan, Aviv	Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA

Suka, Rhonda	Marine Debris Diver	09/25/2014	10/27/2014	F	JIMAR	USA
Tootell, Jesse	Marine Debris Diver	09/25/2014	10/27/2014	M	JIMAR	USA

**G. Administrative**

**1. Points of Contacts:**

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NOAA Ship *Oscar Elton Sette*

1897 Ranger Loop, Bldg. #184, Honolulu, HI 96818

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**2. Diplomatic Clearances**

None Required.

**3. Licenses and Permits**

This project will be conducted under the Coral Reef Ecosystem Division's Marine Debris Project, Pacific Islands Fisheries Science Center; Conservation and Management Permit (PMNM-2013-001) issued by the PMNM to the PMNM Co-Trustees (NOAA, USFWS, and the State of Hawaii) and Conservation and Management Permit (PMNM-2013-003) issued by the PMNM to Commanding Officer, NOAA Ship *Oscar Elton Sette*.

NEPA: An Environmental Assessment (EA) for Research Activities Conducted by the Coral Reef Ecosystem Division, PIFSC, 2010-2015, and

Finding of No Significant Impact (FONSI) signed May 7, 2010.  
([http://www.pifsc.noaa.gov/nepa/CRED\\_Programmatic%20Environmental%20Assessment\\_Final.pdf](http://www.pifsc.noaa.gov/nepa/CRED_Programmatic%20Environmental%20Assessment_Final.pdf))

ESA: On March 28, 2011, PIRO PRD concurred with a “may affect, not likely to adversely affect” determination that was made by CRED. This determination was based, in part, on best practices that would be carried out during debris removal activities as described in 2011 Biological Evaluation.

## II. Operations

The Chief Scientist is responsible for ensuring the scientific staff are trained in planned operations and are knowledgeable of project objectives and priorities. The Commanding Officer is responsible for ensuring all operations conform to the ship’s accepted practices and procedures.

### A. Project Itinerary:

Weather, equipment failures, and scheduling problems are unpredictable. As such, the following intended itinerary should be considered as only a guide for survey progression. In particular, the order in which islands are surveyed may be altered as appropriate based on weather, sea conditions, or the progress of the survey. Transit estimates have been calculated based on a ship’s speed of 9.5 knots westbound and 9.0 eastbound.

#### Pre-Project

- |                 |   |
|-----------------|---|
| September 22-24 | Loading of 20’ open top container and 20’ boat frame/platform with Navy crane. Transfer of small boat fuel (gasoline) to hip tanks via pump truck. Loading of additional six (6) 55-gallon drums of gasoline to the drum rack. Load all program provided boats (4) and equipment. |
| September 25    | <b>Depart Pearl Harbor:</b> Embark all scientific personnel at Pearl Harbor via Ford Island no later than (NLT) 0700. Depart Pearl Harbor NLT 0800 en route to French Frigate Shoals (489 nmi, 2d, 4h). Conduct ship tasks (e.g. Welcome aboard briefing and safety drills.)      |
| September 26    | <b>Transit:</b> Continue transit to French Frigate Shoals. Complete operational briefings and walk throughs.  |

- September 27 **French Frigate Shoals:** Arrive FFS (~1200) for a half day of operations. Personnel will remove marine debris staged on Tern Island. Depart FFS (1800) and transit to Maro Reef (268 nmi, 1d, 4h).
- September 28 **Transit:** Continue transit to Maro Reef.
- September 29-  
October 5 **Maro Reef:** Arrive Maro Reef (NLT 0700) for a full day of operations on September 29. Operations to be conducted while at Maro Reef include: in-water survey and removal of derelict fishing gear (DFG) and opportunistic deployment and removal of oceanographic instrumentation (STR, EAR). Depart Maro Reef (1700) on October 5 and transit to Laysan Island (60nmi, 7h).
- October 6 **Laysan Island:** Arrive Laysan Island (NLT 0700) for a full day of operations on October 6. Operations to be conducted include shoreline survey and removal of DFG and specific plastics. Depart Laysan Island (1700) and transit to Lisianski Island (132 nmi, 14h).
- October 7 **Lisianski Island:** Arrive Lisianski Island (0700) for a full day of operations on October 7. Operations to be conducted include shoreline survey and removal of DFG and specific plastics. Depart Lisianski Island (1600) and transit to Pearl and Hermes Atoll (144 nmi, 15h).
- October 8-16 **Pearl and Hermes Atoll:** Arrive PHR (0700) for a full day of operations on October 8. Operations to be conducted while at PHR include: in-water survey and removal of DFG, shoreline survey and removal of DFG and specific plastics from the four main islets (North, Seal and Kittery, Grass, Southeast), and opportunistic collection of crown-of-thorns sea star (*Acanthaster planci*) specimens. Depart PHR (1600) on October 16 and transit to Midway Atoll (78 nmi, 9h).
- October 17-21 **Midway Atoll:** Arrive Midway (NLT 0700) for a full day of operations on October 17. On October 19 the *Oscar Elton Sette* will pull into port at Midway Atoll to support marine debris operations and media (outreach and education) event. Operations to be conducted while at Midway include: in-water survey and removal of DFG, shoreline survey and removal of all debris from the three main islands (Sand, Spit and Eastern. Depart Midway (1700) on October 21 and transit to Pearl Harbor, Hawai'i (1159 nmi, 5d, 12h).

October 22-26     **Transit:** Continue transit to Pearl Harbor, Hawai‘i.

October 27         **End of Project:** Arrive Pearl Harbor, Hawai‘i (~0800).  
Disembark all scientific personnel.

**B.     Staging and Destaging:**

Staging: Staging of large scientific gear and equipment will begin the week of September 22, or as otherwise coordinated with the Command. Assistance from the ship’s personnel for crane services for large gear, as well as for loading small boat fuel (pumped from truck to ship and six drums), will be necessary. Hand carried items will be loaded in lab areas throughout the week prior to departure. All scientists anticipate embarking the vessel at Ford Island, Pearl Harbor, by 0700, on September 25, 2014.

Midway Atoll Refueling: Replenishment of unleaded gasoline will be required at Midway Atoll. Three drums of fuel (~150 gallons) will be transported to Midway Atoll via NOAA Ship *Hi‘ialakai* prior to the start of this project. Support from ship’s personnel is necessary to arrange the logistics and transfer of this additional unleaded gasoline when at Midway Atoll.

Destaging: Full off-load of all program-provided gear, small boats, and marine debris will occur in Honolulu, in coordination with the Command, once *Oscar Elton Sette* returns to Pearl Harbor, October 27.

**C.     Operations to be Conducted:**

The Chief Scientist has the authority to revise or alter the technical portion of the instructions as work progresses, provided that, after consultation with the Commanding Officer, it is ascertained that the proposed changes will not (1) jeopardize the safety of personnel or the ship, (2) exceed the overall time allotted for the project, (3) result in undue additional expenses, and (4) alter the general intent of the project instructions. In addition, the Chief Scientist must notify the Office of the Science Director of the Pacific Islands Fisheries Science Center at the earliest opportunity prior to making (1) deviations from the general project track or area of operations noted in the project instructions, (2) changes or additions of research operations to those specified in the project instructions, or (3) port calls not specifically identified in the project instructions.

Marine debris teams will utilize two methods for the in-water survey and removal of DFG. Freedive towboarding, also known as Manta Tow, allows for rapid visual surveys in shallow water (less than 30 feet) and maximum area coverage. This unique method requires divers to use breath-holding techniques while being towed behind a 17-ft inflatable at 1-2 knots. Snorkel (swim) surveys are primarily used around reticulated reefs or in areas which are too shallow or intricate to conduct towboard operations effectively. In both methods, divers conduct surveys



until DFG is located at which time various data are collected. Divers determine if the DFG is removable and if so, DFG is manually removed to minimize further damage to the entangled and surrounding reef. In situations where DFG is larger, deeper, or more entangled scuba marine debris operations will be conducted within NOAA Dive Center guidelines and regulations.

Shoreline survey efforts will follow a slightly modified version of the standardized shoreline-survey protocol established by the NOAA Marine Debris Program. At Midway Atoll, teams of marine debris field technician's will survey the shorelines of all three islands (Sand, Spit and Eastern) from the vegetation line to the water's edge for various types of debris with a focus on DFG and plastics (> 10 cm long). This is an attempt to continue the previously established accumulation rate study to determine how much marine debris is entering Midway Atoll annually. Large notable items that are left in place will be tagged and identified for future efforts and to determine if it may be associated with the 2011 Japan Tsunami. At Pearl and Hermes Atoll, French Frigate Shoals, Lisianski Island and Laysan Island shoreline survey and removal efforts will only focus on DFG and potential 2011 Japan Tsunami debris. Any potential Japan Tsunami debris will be documented and reported to the Japan Tsunami Marine Debris Assessment and Response Framework Subject Matter Expert Group for the NWHI.

During in-water and shoreline marine debris operations at Midway Atoll a media group lead by NOAA MDP will be collecting video and photo material to summarize our FY14 survey and removal effort.

Shipboard CTD casts will opportunistically be conducted to a depth of 500 m at the permanent CTD cast stations to examine oceanographic conditions and water quality.

Conduct opportunistic oceanographic equipment (Ecological Acoustic Recorder (EAR), Sea Surface Temperature (SST) bouy, Subsurface Temperature Recorder (STR) deployment, removals, and inspections.

Collection of crown-of-thorns sea stars within the maze at Pearl and Hermes Atoll (see Supplementary ("Piggyback") Projects for further details).

#### **D. Dive Plan**

All dives are to be conducted in accordance with the requirements and regulations of the NOAA Diving Program (<http://www.ndc.noaa.gov/dr.html>) and require the approval of the ship's Commanding Officer.

The Dive Plans, Diving Emergency Assistance Plans, and Dive Accident Management Plan for SE-14-07 are presented in *Appendix 3* (attached file).

## **E. Applicable Restrictions**

Conditions which preclude normal operations: Poor weather and sea conditions, equipment failure, safety concerns, and/or unforeseen circumstances, may alter or prohibit operations as planned. At these times, the Chief Scientist and Commanding Officer will determine the appropriate plan of action.

NMFS employees are not exempt from the requirements of the Marine Mammal Protection Act (MMPA) or the Endangered Species Act (ESA). PIFSC has developed mitigation measures for its fisheries and ecosystem research projects to avoid take and to comply with the Lecky, Murawski, and Merrick guidance. A copy of these documents is available at <https://sites.google.com/a/noaa.gov/pifsc-science-operations/home/nepa-permits/protected-species-mitigation-measures> and on the ship's bridge.

### **1. "Take" of Protected Species**

- a. Under the MMPA and ESA it is unlawful to take a protected species. The MMPA defines take as "harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect." The ESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." An incidental take is one that is incidental to, but not the purpose of, otherwise lawful activities.
- b. In the event of an incidental take of a marine mammal or federally listed threatened or endangered species during the project, the Chief Scientist will report the incident to the ship's Commanding Officer then the PIFSC Director and Deputy Director IMMEDIATELY via IRIDIUM, INMARSAT, and email. Samples should not be collected from any incidentally taken marine mammals, sea turtles, or seabirds.

### **2. Activities in the Hawaiian Islands Humpback Whale National Marine Sanctuary**

- a. The humpback whale season in Hawaii is November through May.
- b. Unless otherwise authorized under the MMPA and ESA, it is unlawful to approach, or cause a vessel or other object to approach, within 100 yards of any humpback whale within the Sanctuary. Please reference the complete list of prohibited activities and boundary maps at <https://sites.google.com/a/noaa.gov/pifsc-science-operations/home/nepa-permits/protected-species-mitigation-measures>. A copy of these materials will also be available on the ship's bridge.

### III. Equipment

#### A. Equipment and Capabilities provided by the ship

1. **Equipment:** To successfully meet the project objectives, the scientific complement aboard will need the ship to provide the items listed below. Prior to sailing, the ship's crew will inspect these items to ensure they are in proper working order for the project:

- 120-ft<sup>3</sup> freezer for quarantine equipment
- Aft Deck Crane
- J Frame
- CTD Equipment
- 17-ft Northwind boat
- 18-ft Achilles inflatable boats
- Handheld VHF radios for ships small boats
- Global Positioning System units for ship's small boats
- 2 ship's coxswains
- 1 survey tech (CTD casts and water samples)
- Storage of Unleaded Fuel (hip tanks and drum racks)
- Scientific Computer System
- Wet Lab faucets and drains
- Adequate fresh water for gear and small boat wash-down
- Iridium phone
- Field lunches for scientific personnel

2. **Capabilities:** It is requested that the ship provide the following:
  - a. Permission for Scientists to ready scientific work spaces (e.g., set up computer server) during the week prior to departure.
  - b. Assistance from the ship's Deck Department in craning and staging large gear during loading and off-loading.
  - c. Support from the Engineering and Deck departments prior to sailing to transfer 2.65 kL (700 gallons) of program-provided gasoline into the ship's hip tanks and six (6) 55-gallon drums (program provided) to be used as outboard engine fuel. The gasoline will be delivered by truck and may be pumped directly into the deck tanks and drums.
  - d. *Oscar Elton Sette's* SE-4 (17-ft Northwind) and SE-2 (18-ft Achilles) will be required to support the program's marine debris teams and media group on a sporadic basis for transportation of personnel and equipment to various islands. The SE-2 may be required as a backup should one of the program boats become

inoperable or to mitigate unforeseen events. The ship should plan to provide coxswains for SE-4 and SE-2 during operational days.

- e. Mid-project support will be necessary to transfer three (3) 55-gallon drums of unleaded gasoline (~150 gallons) during in-port at Midway Atoll.
- f. An experienced survey technician is requested to conduct nighttime shipboard CTD operations.
- g. To be consistent with the mission objectives, the ship and its compliment of small boats will employ all methods feasible to minimize damage to coral reef habitats during any anchoring operations that may be required.

## **B. Equipment and Capabilities Provided by the Scientists**

1. **Equipment:** The program's full equipment list is presented in *Appendix 4* (attached file).
2. **Capabilities:** In addition to scientific expertise, the program will provide the following capabilities:
  - a. Coxswains and routine maintenance for program-provided 17' Avons and Zodiacs.
  - b. A scientist to assist on deck with deployment and recovery of the CTD rosette.

## **IV. Hazardous Materials**

### **A. Policy and Compliance**

The Chief Scientist is responsible for complying with FEC 07 Hazardous Materials and Hazardous Waste Management Requirements for Visiting Scientific Parties (or the OMAO procedure that supersedes it). By Federal regulations and NOAA Marine and Aviation Operations policy, the ship may not sail without a complete inventory of all hazardous materials by name and quantity, MSDS, appropriate spill cleanup materials (neutralizing agents, buffers, or absorbents) in amounts adequate to address spills of a size equal to the amount of chemical brought aboard, and chemical safety and spill response procedures. Documentation regarding those requirements will be provided by the Chief of Operations, Marine Operations Center, upon request.

Per OMAO procedure, the scientific party will include with their project instructions and provide to the CO of the respective ship 30 days before departure:

- List of chemicals by name with anticipated quantity
- List of spill response materials, including neutralizing agents, buffers, and absorbents
- Chemical safety and spill response procedures, such as excerpts of the program's Chemical Hygiene Plan or SOPs relevant for shipboard laboratories
- For bulk quantities of chemicals in excess of 50 gallons total or in containers larger than 10 gallons each, notify ship's Operations Officer regarding quantity, packaging and chemical to verify safe stowage is available as soon as chemical quantities are known.

Upon embarkation and prior to loading hazardous materials aboard the vessel, the scientific party will provide to the CO or their designee:

- An inventory list showing actual amount of hazardous material brought aboard
- An MSDS for each material
- Confirmation that neutralizing agents and spill equipment were brought aboard sufficient to contain and cleanup all of the hazardous material brought aboard by the program
- Confirmation that chemical safety and spill response procedures were brought aboard

Upon departure from the ship, scientific parties will provide the CO or their designee an inventory showing that all chemicals were removed from the vessel. The CO's designee will maintain a log to track scientific party hazardous materials. MSDS will be made available to the ship's complement, in compliance with Hazard Communication Laws.

Scientific parties are expected to manage and respond to spills of scientific hazardous materials. Overboard discharge of hazardous materials is not permitted aboard NOAA ships.

## B. Inventory of Hazardous Materials

Common Name	Quantity	Notes	Trained Individual	Spill Control*
95% Ethyl Alcohol (190 proof)	7.6 L	Highly Volatile, Flammable  Daily use quantity (19 L carboy) stored in Wet lab in secondary containment;  Preserved samples stored in secondary containment in Scientific freezer.	Kerry Reardon (Daily use and sample quantities)	AL (Daily use)
Gasoline, unleaded	2.6 kL	Volatile, Flammable  Stored in ship's hip tanks & drum rack	Ship's Chief Engineer	Ship SOP
Liquid Nitrogen	30 L	Stored in Wetlab Scientific dewars	Kerry Reardon	LN
Pool Time Shock XtraBlue 6 in 1 Pool Shock  (primarily Sodium Dichloro-s-Triazinetrione- Dihydrate)	4.6 kg	Corrosive  Contained in 10 1-lb bags within lidded 5-gal bucket	Kerry Reardon	P

## C. Chemical safety and spill response procedures

### \*Spill Control Key

#### AL: Alcohols (daily use quantities)

- Extinguish smoking lamp. Remove all sources of ignition.
- Wear appropriate PPE and clothing during clean-up.
- Ventilate closed spaces before entering them.
- Use absorbent socks to surround spills or to divert fluid flow.
- Use vermiculite or kitty litter to soak up and absorb fluid.
- Do not use combustible materials, such as saw dust.
- Use absorbent pads/diapers to wipe up the spill or a dust pan to sweep up vermiculite/kitty litter.
- Place used absorbents in plastic bag or pail.

- Clean surface thoroughly to remove residual contamination.
- Bags containing used absorbents will be properly disposed of once the ship returns to port.

#### **LN: Liquid Nitrogen**

- Wear appropriate PPE (close-toed shoes, cryogloves, goggles, long-sleeved and long-legged clothes are of particular importance).
- Ventilate area.
- Contain spill where safe to do so.
- Nitrogen is more harmful in its liquid state than in its gaseous state, in a well-ventilated area. Minimally handle or interfere with the spilled LN, and allow it to sublime off after restricting personnel access to the contained spill area under well maintained ventilation.

#### **P: Powdered Chlorine Salts**

- Wear appropriate PPE (gloves, eyewear, dust mask, etc.) and clothing during clean-up.
- Ventilate area.
- Keep upwind. Avoid inhalation of salts, granules or dust.
- **Large Spills:** Sweep or scoop all spilled material, contaminated soil or other materials and place into clean, dry containers for disposal. Do not close containers containing wet or damp material. If wet or damp, container should be left open in a well-ventilated area to disperse any hazardous gases that may form. Once cleaned, neutralize/flood the spill area with large amounts of water as appropriate.
- **Small Spills:** Sweep or scoop up spilled material and add it to dive gear “disinfectant” rinse tote if available and full of water. If dive gear “disinfectant” rinse tote is not available, dispose of collected material into a clean, dry container. Once cleaned, neutralize/flood spill area with large amounts of water as appropriate.
- Never return spills to original containers for re-use.

#### **Inventory of Spill Kit Supplies**

<b>Product Name</b>	<b>Amount</b>	<b>Chemicals useful against</b>	<b>Amount of clean up possible</b>
Absorbent pads	20	AL	~4 L
Dust pan	1 set	P	n/a
Goggles	1 pair	AL, LN, P	n/a
Kitty litter	5.4 kg	AL	~4 L
Plastic bags	5	AL, P	~4 L (each)
Rubber gloves	2 pairs	AL, P	n/a

#### **D. Radioactive Materials**

No Radioactive Isotopes are planned for this project.

#### **V. Additional Projects**

Supplementary (piggyback) and ancillary projects are secondary to the objectives of the project and should be treated as additional investigations. The difference between the two types of secondary projects is that an ancillary project does not have representation aboard and is accomplished by the ship's force.

##### **A. Supplementary ("Piggyback") Projects**

###### **1. *Acanthaster planci* (crown-of-thorns sea star) Sampling.** NOAA PIFSC CRED.

Arms from the corallivorous crown-of-thorns sea star (COTS), *Acanthaster planci*, will be fortuitously collected in the maze, lagoon, and backreef of Pearl and Hermes Atoll during marine debris operations. Using a shears or knife, divers will remove an arm from the organism, use forceps to remove the tube foot in the small boat, and immediately place the tube feet into 2 ml cryovials filled with ethanol. The collected tissue will be used to examine the population structure of this sea star within the atoll. Previous work on their population structure (Timmers et al. 2012) found the COTS population within the maze to be genetically distinct from the rest of the archipelago. Forereef populations along Pearl and Hermes Atoll were more similar to populations collected in the Main Hawaiian Islands than within the maze. The collected organisms will be used to examine if this still holds true one COTS generation after the original collection that occurred in 2007.

In addition, up to five (5) whole COTS will be collected from the maze, placed in a bucket of sea water, and flash frozen in liquid nitrogen dewar(s) once back onboard the NOAA ship. These whole organisms will be used to examine whether the genes from the COTS within the maze are adapting differently than COTS from the rest of the archipelago.

This research will be conducted by appropriately trained CRED marine debris personnel in conjunction with Rob Toonen from the Hawaii Institute of Marine Biology.

##### **B. NOAA Fleet Ancillary Projects**

No NOAA Fleet Ancillary Projects are planned.



## VI. Disposition of Data and Reports

Disposition of data gathered aboard NOAA ships will conform to NAO 216-101 *Ocean Data Acquisitions* and NAO 212-15 *Management of Environmental Data and Information*. To guide the implementation of these NAOs, NOAA's Environmental Data Management Committee (EDMC) provides the *NOAA Data Documentation Procedural Directive* (data documentation) and *NOAA Data Management Planning Procedural Directive* (preparation of Data Management Plans). OMAO is developing procedures and allocating resources to manage OMAO data and Programs are encouraged to do the same for their Project data.

- A. Data Classifications: *Under Development*
  - a. OMAO Data
  - b. Program Data - *Under Development*.  
Contact Nori Shoji ([noriko.shoji@noaa.gov](mailto:noriko.shoji@noaa.gov)), PIFSC Directorate - Science Operations Lead, for PIFSC data policy updates.
- B. Responsibilities: *Under Development*

## VII. Meetings, Vessel Familiarization, and Project Evaluations

- A. Pre-Project Meeting: The Chief Scientist and Commanding Officer will conduct a meeting of pertinent members of the scientific party and ship's crew to discuss required equipment, planned operations, concerns, and establish mitigation strategies for all concerns. This meeting shall be conducted before the beginning of the project with sufficient time to allow for preparation of the ship and project personnel. The ship's Operations Officer usually is delegated to assist the Chief Scientist in arranging this meeting.
- B. Vessel Familiarization Meeting: The Commanding Officer is responsible for ensuring scientific personnel are familiarized with applicable sections of the standing orders and vessel protocols, e.g., meals, watches, etiquette, drills, etc. A vessel familiarization meeting shall be conducted in the first 24 hours of the project's start and is normally presented by the ship's Operations Officer.
- C. Post-Project Meeting: The Commanding Officer is responsible for conducted a meeting no earlier than 24 hours before or seven days after the completion of a project to discuss the overall success and short comings of the project. Concerns regarding safety, efficiency, and suggestions for future improvements shall be discussed and mitigations for future projects will be documented for future use. This meeting shall be attended by the ship's officers, applicable crew, the Chief

Scientist, and members of the scientific party and is normally arranged by the Operations Officer and Chief Scientist.

- D. Project Evaluation Report: Within seven days of the completion of the project, a Customer Satisfaction Survey is to be completed by the Chief Scientist. The form is available at <http://www.omaο.noaa.gov/fleeteval.html> and provides a “Submit” button at the end.

The Customer Satisfaction Survey is one of the primary methods OMAO and Marine Operations (MO) utilize to improve ship customer service. Information submitted through the form is automatically input into a spreadsheet accessible to OMAO and MO management for use in preparing quarterly briefings. Marine Operations Centers (MOC) address concerns and praise with the applicable ship. Following the quarterly briefings the data are briefed to the Deputy Director of OMAO.

## **VIII. Miscellaneous**

### **A. Meals and Berthing**

The ship will provide meals for the scientists listed above. Meals will be served three (3) times daily beginning one hour before scheduled departure, extending throughout the project, and ending two hours after the termination of the project. Since the watch schedule is split between day and night, the night watch may often miss daytime meals and will require adequate food and beverages (for example a variety of sandwich items, cheeses, fruit, milk, juices) during what are not typically meal hours. Special dietary requirements for scientific participants will be made available to the ship’s command at least seven days prior to the project.

Berthing requirements, including number and gender of the scientific party, will be provided to the ship by the Chief Scientist. The Chief Scientist and Commanding Officer will work together on a detailed berthing plan to accommodate the gender mix of the scientific party taking into consideration the current make-up of the ship’s complement. The Chief Scientist is responsible for ensuring the scientific berthing spaces are left in the condition in which they were received; for stripping bedding and linen return; and for the return of any room keys which were issued. The Chief Scientist is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the project and at its conclusion prior to departing the ship.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Chief Scientist will ensure that all non NOAA or non Federal scientists aboard also have proper orders. It is the responsibility of the Chief Scientist to ensure that the entire scientific party has a mechanism in place to provide lodging and food and to be reimbursed for these costs in the event that the ship becomes uninhabitable and/or the galley is closed during any part of the scheduled project.

All persons boarding NOAA vessels give implied consent to comply with all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time. All personnel must comply with OMAO's Drug and Alcohol Policy dated May 17, 2000 which forbids the possession and/or use of illegal drugs and alcohol aboard NOAA Vessels.

**B. Medical Forms and Emergency Contacts**

The NOAA Health Services Questionnaire (NHSQ, Revised: 02 JAN 2012) must be completed in advance by each participating scientist. The NHSQ can be obtained from the Chief Scientist or the NOAA website <http://www.corporateservices.noaa.gov/~noaaforms/eforms/nf57-10-01.pdf>. The completed form should be sent to the Regional Director of Health Services at Marine Operations Center. The participant can mail, fax, or scan and send via secure e-mail the form using the contact information below; participants should take precautions to protect their Personally Identifiable Information (PII) and medical information. The NHSQ should reach the Health Services Office no later than four weeks prior to the project to allow time for the participant to obtain and submit additional information that health services might require before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of the NHSQ. Be sure to include proof of tuberculosis (TB) testing, sign and date the form, and indicate the ship or ships the participant will be sailing on. The participant will receive an email notice when medically cleared to sail if a legible email address is provided on the NHSQ.

Contact information:

Regional Director of Health Services  
Marine Operations Center – Pacific  
2002 SE Marine Science Dr.  
Newport, OR 97365  
Telephone 541-867-8822  
Fax 541-867-8856  
Email [MOP.Health-Services@noaa.gov](mailto:MOP.Health-Services@noaa.gov)

Prior to departure, the Chief Scientist must provide an electronic listing of emergency contacts to the Executive Officer for all members of the scientific party, with the following information: contact name, address, relationship to member, and telephone number.

**C. Shipboard Safety**

Hard hats with chin straps are required when working with suspended loads. Work vests are required when working near open railings and during small boat launch and recovery operations. Hard hats and work vests will be provided by the program when required.

Wearing open-toed footwear or shoes that do not completely enclose the foot (such as sandals or clogs) outside of private berthing areas is not permitted. At the discretion of the ship CO, safety shoes (i.e. steel or composite toe protection) may be required to participate in any work dealing with suspended loads, including CTD deployment and recovery. The ship does not provide safety-toed shoes/boots. The ship's Operations Officer should be consulted by the Chief Scientist to ensure members of the scientific party report aboard with the proper attire.

**D. Communications**

A progress report on operations prepared by the Chief Scientist may be relayed to the program office. Sometimes it is necessary for the Chief Scientist to communicate with another vessel, aircraft, or shore facility. Through various means of communications, the ship can usually accommodate the Chief Scientist. Special radio voice communications requirements should be listed in the project instructions. The ship's primary means of communication with the Marine Operations Center is via e-mail and the Very Small Aperture Terminal (VSAT) link. Standard VSAT bandwidth at 128kbs is shared by all vessels staff and the science team at no charge. Increased bandwidth in 30 day increments is available on the VSAT systems at increased cost to the scientific party. If increased bandwidth is being considered, program accounting is required and it must be arranged at least 30 days in advance.

**E. IT Security**

Any computer that will be hooked into the ship's network must comply with the *OMAO Fleet IT Security Policy 1.1* (November 4, 2005) prior to establishing a direct connection to the NOAA WAN. Requirements include, but are not limited to:

- (1) Installation of the latest virus definition (.DAT) file on all systems and performance of a virus scan on each system.

- (2) Installation of the latest critical operating system security patches.
- (3) No external public Internet Service Provider (ISP) connections.

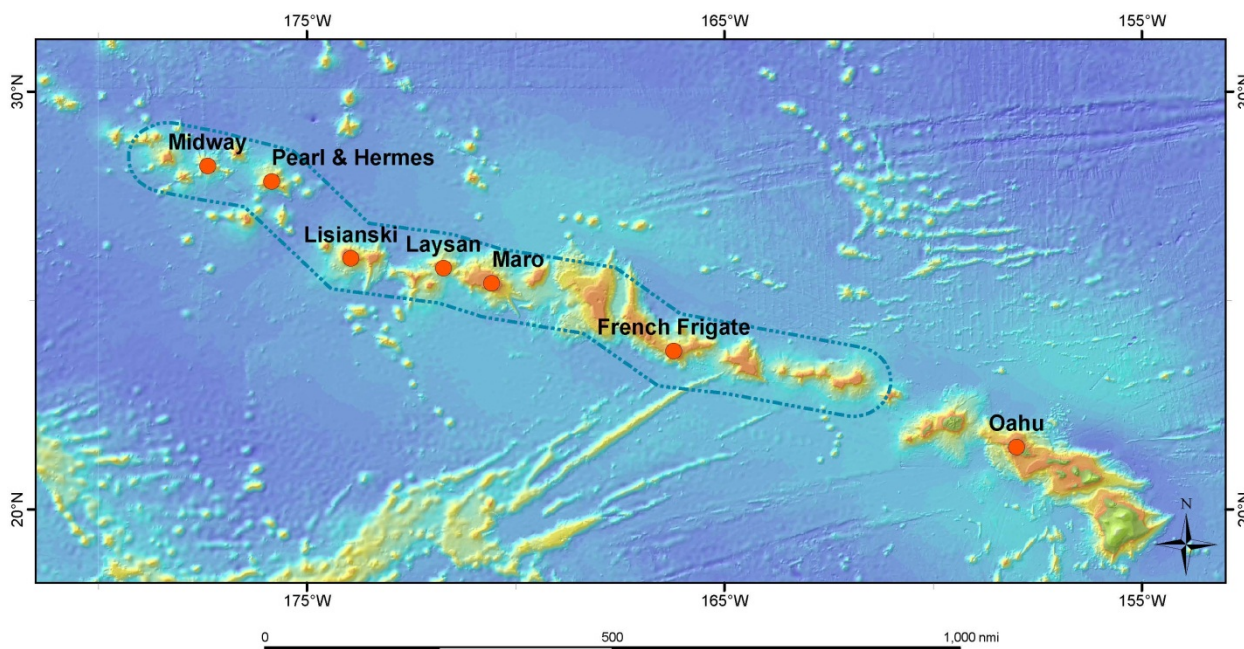
Completion of the above requirements prior to boarding the ship is required.

Non-NOAA personnel using the ship's computers or connecting their own computers to the ship's network must complete NOAA's IT Security Awareness Course within three days of embarking.

#### **F. Foreign National Guests Access to OMAO Facilities and Platforms**

Foreign National access to the NOAA ship or Federal Facilities is not required for this project.

### **VIII. Appendices**



*Appendix 1:* Operating Area for SE-14-07 (Marine Debris)

*Appendix 2:* Station/Waypoint List (coordinates in Latitude, Longitude) (attached file)

*Appendix 3:* Dive Plans (attached file)

*Appendix 4:* Program Equipment List (attached file).