

FINAL Project Instructions


Date Submitted: August 3, 2015


Platform: NOAA Ship *Oscar Elton Sette*

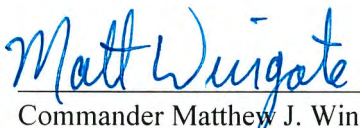
Project Number: SE-15-06 (OMAO)

Project Title: Hawaiian monk seal population assessment

Project Dates: September 3, 2015 to September 30, 2015

Prepared by:  Dated: 8/11/15
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Chief Scientist
Pacific Islands Fisheries Science Center

Approved by:  Dated: 8/12/15
Michael P. Seki, Ph.D., Director ^{for}
Pacific Islands Fisheries Science Center

Approved by:  Dated: 14 AUG 2015
Commander Matthew J. Wingate, NOAA
Commanding Officer
Marine Operations Center – Pacific Islands

I. Overview

A. Brief Summary and Project Period

B. Days at Sea (DAS)

Of the 28 DAS scheduled for this project, 28 DAS are funded by an OMAO allocation. This project is estimated to exhibit a high Operational Tempo.

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

The operating area includes the main Hawaiian Islands (MHI) and Papahānaumokuākea Marine National Monument from the island of Hawaii to Kure Atoll with Hawaiian monk seal surveys and/or camp recovery at Ni'ihau Island, Nihoa Island, Necker Island, French Frigate Shoals, Laysan Island, Lisianski Island, Pearl and Hermes Reef, Midway Atoll, and Kure Atoll. The project will begin with the collection of juvenile seals from a rehabilitation facility in Kona on Hawaii Island to be returned to a site in the Northwestern Hawaiian Islands (NWHI).

D. Summary of Objectives

The main objectives for SE 15-06 are:

1. Recover Hawaiian monk seal camps at French Frigate Shoals, Laysan Island, Lisianski Island, Pearl and Hermes Reef and Kure Atoll.
2. Conduct monk seal beach surveys at Ni'ihau, Nihoa, and Necker Islands.
3. Translocate Hawaiian monk seals between a rehabilitation facility in Kona on the island of Hawaii and sites within the NWHI.
4. Conduct trials of Unmanned Aircraft Systems (UAS; Puma and multi-copter platforms) at French Frigate Shoals, Laysan Island, Lisianski Island, and Pearl and Hermes Reef.
5. Deploy and recover a temporary camp at Nihoa Island to conduct monk seal, vegetation, and bird surveys.
6. Deploy and recover a temporary camp for the US Fish and Wildlife Service (FWS) and American Bird Conservancy (ABC) Nihoa Miller Bird camp on Laysan Island.
7. Deliver and recover supplies to Kure Atoll for the Department of Forestry and Wildlife (DOFAW), Department of Land and Natural Resources (DLNR), State of Hawaii.
8. Deploy and recover a High-frequency Acoustic Recording Package (HARP) at Pearl and Hermes Reef and recover a HARP near Kauai Island as time allows.
9. Opportunistic CTDs casts.

E. Participating Institutions

Hawaiian monk seal research program of the Protected Species Division of the NOAA Pacific Islands Fisheries Science Center (HMSRP/PSD/PIFSC); Joint Institute for Marine and

Atmospheric Research (JIMAR), US Fish and Wildlife Service (FWS), NOAA Office of National Marine Sanctuaries (ONMS), Aerial Imaging Solutions (AIS), AeroVironment (AV), State of Hawaii Department of Land and Natural Resources (DLNR), American Bird Conservancy (ABC), The Marine Mammal Center (TMMC), The Monk Seal Foundation (MSF), Ocean Associates (OA).

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

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Barbieri, Michelle	Veterinarian	9/9/2015	9/30/2015	F	NOAA	USA
Barcina, Keelan	JIMAR volunteer	9/26/2015	9/30/2015	M	JIMAR	USA
Bohlander, Jessica	Field Research Supervisor /Chief Scientist	9/3/2015	9/30/2015	F	JIMAR	USA
Burns, Michael	Biological Research Technician	9/26/2015	9/30/2015	M	JIMAR	USA
Callan, Sarah	JIMAR volunteer	9/24/2015	9/30/2015	F	JIMAR	USA
Cate, Jenipher	Biological Research Assistant	9/23/2015	9/30/2015	F	JIMAR	USA
Clausman, Matthew	Collaborator	9/10/2015	9/19/2015	M	AV	USA
Cook, Ben	Biological Research Assistant	9/15/2015	9/21/2015	M	JIMAR	USA
Dunn, Noel	DLNR volunteer	9/19/2015	9/20/2015	F	DLNR	USA
Farmer, Chris	Hawaiian Bird Science Coordinator	9/3/2015 9/11/2015 9/24/2015	9/5/2015 9/15/2015 9/30/2015	M	ABC	USA
Farry, Shawn	Biological Research Technician	9/26/2015	9/30/2015	M	JIMAR	USA
Ferguson, John	Collaborator	9/10/2015	9/19/2015	M	AV	USA
Harris, Jacob	JIMAR volunteer	9/18/2015	9/30/2015	M	JIMAR	USA
Hebert, Coryan	DLNR volunteer	9/19/2015	9/20/2015	F	DLNR	USA
Hess, Megan	Biological Research Assistant	9/18/2015	9/30/2015	F	JIMAR	USA
Hopkins, John	DLNR Volunteer	9/20/2015	9/21/2015	M	DLNR	USA
Jacobs, Todd	Deputy Superintendent for Operations	9/10/2015	9/19/2015	M	ONMS	USA
Jardine, Jon-Erik	DLNR volunteer	9/20/2015	9/21/2015	M	DLNR	USA
Kaufman, Angela	Veterinary Lab Associate	9/19/2015	9/30/2015	F	JIMAR	USA
Klemme, Mikal	DLNR volunteer	9/20/2015	9/21/2015	M	DLNR	USA
Leach, Laurina	JIMAR volunteer	9/20/2015	9/30/2015	F	JIMAR	USA
Leroi, Donald	Collaborator	9/10/2015	9/19/2015	M	AIS	USA
Little, Nicole	DLNR volunteer	9/20/2015	9/21/2015	F	DLNR	USA
Littnan, Charles	Supervisory Research Ecologist	9/3/2015	9/19/2015	M	NOAA	USA
Matsuoka, Koa	Biological	9/26/2015	9/30/2015	M	JIMAR	USA

	Research Assistant					
McAtee, Carrie	Biological Research Technician	9/24/2015	9/30/2015	F	JIMAR	USA
McPheeters, Martha	DLNR volunteer	9/19/2015	9/20/2015	F	DLNR	USA
Meggett, Tara	DLNR volunteer	9/20/2015	9/21/2015	F	DLNR	USA
Mercer, Tracy	Main Hawaiian Island Supervisor	9/3/2015	9/10/2015	F	JIMAR	USA
Nimz, Ilana	Biological Research Technician	9/20/2015	9/21/2015	F	JIMAR	USA
Opie, Eryn	DLNR technician	9/19/2015	9/20/2015	F	DLNR	USA
Pike, Dianne	Monk Seal Foundation	9/3/2015	9/10/2015	F	MSF	USA
Plenovich, Sheldon	Coastal Program Coordinator	9/3/2015 9/11/2015 9/24/2015	9/5/2015 9/15/2015 9/30/2015	F	USFWS	USA
Roberts, Darren	Biological Research Technician	9/18/2015	9/30/2015	M	JIMAR	USA
Robinson, Stacie	Research Ecologist	9/19/2015	9/30/2015	F	NOAA	USA
Rogers, Kim	Collaborator	9/3/2015	9/30/2015	F		USA
Ronco, Hope	Biological Research Technician	9/23/2015	9/30/2015	F	JIMAR	USA
Saunter, Matthew	DLNR technician	9/20/2015	9/21/2015	M	DLNR	USA
Sullivan, Mark	Response Technician	9/3/2015 9/11/2015	9/5/2015 9/30/2015	M	JIMAR	USA
Sullivan-Haskins, Andrew	DLNR volunteer	9/19/2015	9/20/2015	M	DLNR	USA
Swatland, David	Collaborator	9/10/2015	9/19/2015	M	NOAA	USA
Sweeney, Kathryn	Collaborator	9/10/2015	9/19/2015	F	OA	USA
Thompson, Jamie	Response Coordinator	9/3/2015	9/10/2015	M	NOAA	USA
Vollbrecht, Kevin	Collaborator	9/10/2015	9/19/2015	M	AV	USA
Waters, Kristoffer	Collaborator	9/10/2015	9/19/2015	M	AV	USA
Wickham, Deborah	Veterinary Technician	9/9/2015	9/19/2015	F	TMMC	USA
Worchester, Naomi	DLNR technician	9/20/2015	9/21/2015	F	DLNR	USA

G. Administrative

1. Points of Contacts:

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LTJG David McVay
Acting Operations Officer, Oscar Elton Sette
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2. Diplomatic Clearances

None Required.

3. Licenses and Permits

This project will be conducted under the Scientific Research and Enhancement Permit (U.S.) No. 10137-07 issued on July 11, 2012 per the Endangered Species Act and Marine Mammal Protection Act by NMFS Office of Protected Resources to the PIFSC; Conservation and Management Permit PMNM-2015-001 issued by the Papahānaumokuākea Marine National Monument (PMNM) to the PMNM Co-Trustees (NOAA, USFWS, and the State of Hawaii); and Conservation and Management Permit PMNM-2015-xx issued by PMNM to Commanding Officer, R/V *Oscar Elton Sette*.

II. Operations

The following plans can be considered as only a guide to how the Chief Scientist expects the surveys to progress without being able to predict the weather, operational and scheduling problems, and equipment failures. In particular, it should be noted that the amount of time required at each of the working areas is approximate and may be altered, based on weather or the progress of the survey.

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:

- 3 September **Pearl Harbor:** Embark 9: Bohlander, Littnan, Sullivan, Mercer, Thompton, Pike, Rogers, Plentovich, Farmer. Depart tbd for Ni'ihau.
- 4 September **Ni'ihau:** Morning arrival at Ni'ihau Island. Launch SE-2 to transport personnel to shore to conduct monk seal survey, pick SE-2. Transit to Lehua Rock, launch SE-2 with second survey team to conduct survey of Lehua rock. Secure operations at Lehua Rock, recovery personnel and small boat, transit to pick up Ni'ihau shore team. Afternoon (approximately 1700) Recover shore team; depart Ni'ihau en route to Nihoa Island.
- 5 September **Nihoa:** Morning arrival at Nihoa Island. Launch SE-2 to conduct monk seal survey on main beach and West Ledge. Disembark 3: Sullivan, Plentovich, Farmer. Camp will be deployed until pickup on 11 September. Camp will check in by phone to Brenda Becker (HMSRP) daily. Afternoon (approximately 1700) recover remainder of survey team and depart en route to Mokumanamana Island (Necker).
- 6 September **Mokumanamana:** Morning arrival at Mokumanamana Island. Launch SE-2 to conduct monk seal survey. Early afternoon (approximately 1400), secure operations; depart Mokumanamana en route to Kona.
- 7 September **Transit**
- 8 September **Transit**
- 9 September **Kona:** Arrive Honokohau Harbor. Deploy SE-4 and seal party to Honokohau Harbor to collect seals coming from Ke Kai Ola rehabilitation facility. Seals will be transferred to ship using SE-4. Embark 2: Barbieri and Wickham. Depart (midday) en route for Honolulu.
- 10 September **Honolulu:** Early morning arrival at Honolulu (approximately 0800); conduct small boat transfer at Kewalo Basin. Embark 8: Jacobs, Leroi, Ferguson, Waters, Vollbrecht, Clausman, Sweeney, Swatland. Disembark 3: Mercer, Thompton, Pike. Early morning departure en route to Nihoa Island.
- 11 September **Nihoa:** Arrive Nihoa Island. Launch SE-2 with field team to conduct seal survey on main beach and West Ledge. Afternoon secure survey, recover shore personnel and embark Sullivan, Plentovich, and Farmer. Afternoon (approximately 1600) depart for Mokumanana.
- 12 September **Mokumanamana:** Morning arrival at Mokumanamana Island. Launch SE-2 to conduct monk seal survey. Midday secure survey, recover small boat, and depart Mokumanamana en route to Laysan Island.
- 13 September **Transit**
- 14 September **Laysan:** Morning arrival at Laysan Island. Deploy SE-04 with seal team and UAS team. Conduct seal sampling and surveys and UAS ops on land. Disembark 2: Plentovich and Farmer. Afternoon (approximately 1600) secure survey, recover shore team.
- 15 September **Laysan:** Morning deploy SE-04 with seal team and UAS team. Conduct seal sampling and surveys and UAS ops on land. Embark 1: Cook. Afternoon

- (approximately 1600) secure operations, recover shore team, and depart en route to Lisianski Island.
- 16 September **Lisianski:** Morning arrival at Lisianski Island. Deploy SE-04 with seal team and UAS team. Conduct seal sampling and surveys and UAS ops on land. Afternoon (approximately 1600) secure operations, recover shore team, and depart en route to PHR.
- 17 September **PHR:** Morning arrival at PHR. Deploy SE-04 with seal team and UAS team. Release 2 seals. Conduct seal surveys and UAS ops on land and from SE-4 in maze. Afternoon (approximately 1600) secure operations and recover shore team. Recover PHR HARP as time allows.
- 18 September **PHR:** Deploy SE-04 with seal team and UAS team. Conduct seal sampling and UAS ops on land and from small boat in maze. Afternoon (approximately 1600) secure operations, recover shore team, and depart en route to Midway Atoll.
- 19 September **Midway:** Morning arrival at Midway cargo pier. Deploy shore team to conduct seal survey. Disembark 10: Jacobs, Leroi, Ferguson, Waters, Vollbrecht, Clausman, Sweeney, Swatland, Littnan, Wickham. Embark 9: Kaufman, Robinson, Opie, McPheeters, Dunn, Potter, Vanderlip, Sullivan-Haskins, Hebert. Offload 400 drums gasoline in drums. Afternoon (approximately 1700) depart en route to Kure Atoll.
- 20 September **Kure:** Morning arrival at Kure Atoll. Launch SE-2 and SE-4, commence offload of DLNR supplies. Load DLNR and NMFS camp supplies. Deploy seal team to assess possible rehabilitation candidates. Possible collection of seals for rehabilitation. Disembark 7: Opie, McPheeters, Dunn, Potter, Vanderlip, Sullivan-Haskins, Hebert. Embark 9: Nimz, Leach, Saunter, Worchester, Hopkins, Little, Klemme, Jardine, Meggett. Afternoon (approximately 1700) depart en route to Midway Atoll.
- 21 September **Midway:** Morning arrival at Midway cargo pier. Deploy shore team to conduct seal survey. Disembark 2: Cook, Nimz. Afternoon (approximately 1700) depart en route to PHR.
- 22 September **PHR:** Morning arrival at PHR. Launch SE-4 and SE-2; demobilize camp and load equipment and supplies including one 5-meter inflatable boat, and one 5.5 meter RHIB. Possible collection of seals for rehabilitation. Embark 3: Roberts, Hess, and Harris. Afternoon (approximately 1700) depart en route to Lisianski Island.
- 23 September **Lisianski:** Morning arrival at Lisianski. Launch SE-4 and SE-2; demobilize camp and load equipment and supplies. Possible collection of seals for rehabilitation. Embark 2: Ronco and Cate. Afternoon (approximately 1700) depart en route to Laysan Island.
- 24 September **Laysan:** Morning arrival at Laysan. Demobilize camp and load equipment and supplies. Load equipment and supplies using SE-4 and SE-2. Possible collection

- of seals for rehabilitation. Embark 4: McAtee, Callan, Plentovich, and Farmer. Afternoon (approximately 1700) depart en route to FFS.
- 25 September **Transit**
- 26 September **FFS:** Morning arrival at FFS. Launch SE-4 and SE-2; demobilize camp and load equipment and supplies, including one 17-ft Boston Whaler and one 6-meter RHIB. Possible collection of seals for rehab. Embark 4: Farry, Burns Matsuoka, Barcina. Afternoon (approximately 1700) depart. If seals were collected at any site, they will be taken to Kona. If no seals were collected the ship will go to Nihoa and/or Mokumanamana then Honolulu.
- 27 September **Transit**
- 28 September **Transit**
- 29 September **Kona:** Morning arrival at Honokohau Harbor. Deploy small boat and seal team with rehab seals to meet seal team on shore. Disembark 2: Barbieri, and Kaufman. Possible recovery of HARP at Jaggar seamount. Depart en route to Pearl Harbor.
- 30 September **Pearl Harbor.** Disembark 18: Bohlander, Sullivan, Rogers, Robinson, Farry, Burns, Matsuoka, Barcina, McAtee, Callan, Leach, Plentovich, Farmer, Ronco, Cate, Roberts, Hess, and Harris. End of cruise.

B. Staging and Destaging:

Staging Plan – On 31 August, 0800, begin loading all supplies and equipment including a 20ft container and 700 gallons of gasoline. Continue loading supplies and equipment 1-2 September.

Destaging Plan - On 30 September - October 2, Ship's crane and operator support will be needed to offload scientific gear and equipment onto the pier. Navy crane will be needed to offload 20-ft container.

The Chief Scientist and Operations Lead will coordinate staging and destaging operations with the *Sette* Operations Officer.

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 cruise 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.

Monk seal camp demobilization and supply transport

SE will be utilized to demobilize field camps at French Frigate Shoals, Laysan Island, Lisianski Island, Pearl and Hermes Reef, and Kure Atoll. SE-2 and SE-4 will be used to transport equipment, supplies, and personnel while demobilizing camps. Boat deck and aft deck cranes will be used to remove heavy and large items from boats. Supplies and personnel will be transported by SE 15-06 for USFWS and ABC to Laysan Island and for and DLNR to/from Kure Atoll. See cargo manifest attachment for complete list of NMFS and partners' cargo.

Opportunistic surveys

Hawaiian monk seal population surveys will be conducted at Mokumanamana Island, Nihoa Island, Ni'ihau Island, and Midway Atoll. Mokumanamana Island, Nihoa Island, Ni'ihau Island will be accessed using SE-2 by deploying a team of scientists to shore. Pending permits, a temporary camp will be established on Nihoa Island with staff from HMSRP, FWS, and ABC to conduct monk seal, seabird, and vegetation surveys.

Kona to/from NWHI translocations

Two weaned pups will be transported from a rehabilitation facility in Kona on the Island of Hawaii to Pearl and Hermes Reef. Additional seals will be collected from the NWHI during SE15-06 and transported to the rehabilitation facility at the end of the project. On board the ship the seals will be held in cages on the aft deck. Small boats will be used to move seals between the ship and the islands in stretcher nets or large kennels. While seals are on deck, limited access will be allowed to maintain quarantine around seals. Seals will be monitored by scientists 24 hrs while on the ship.

UAS Operations

Three Unmanned Aircraft Systems (UAS) platforms will be utilized during SE 15-06. These include a fixed wing Puma, an APH-22 hexacopter, and a MK 9 Ivan Octocopter. UAS operations will take place at multiple sites and may include French Frigate Shoals, Laysan Island, Lisianski Island, and Pearl and Hermes Reef for protected species surveys, marine debris mapping, seabird surveys, and vegetation surveys. In the event that weather or sea conditions are not suitable for UAS operations, as determined by the Chief Scientist and the Pilot in Command (PIC), operations will be cancelled or suspended for the day. See UAS Mission Plan for details on communications and contingency procedures.

The UAS vehicles will be launched and operated from land, or a small boat offshore of each island. UAS operations are not anticipated to occur from the ship. Surveys will be conducted to locate and image Hawaiian monk seals for population assessment and identification as well as other land surveys for seabird, vegetation, maritime archaeology, and land debris. Marine surveys will be conducted at Pearl and Hermes reef to survey for marine debris in areas of dense coral reef. The UAS will land in the ocean close to the site and be recovered by small boat. 3-4 flights per day for the Puma and 5-8 for the multipcopter vehicles are anticipated during daylight hours.

HARP

The project will support the PSD Cetacean Research Program by opportunistically recovering and deploying High-frequency Acoustic Recording Packages (HARPs) at Pearl and Hermes Reef and Jaggar Seamount. This will be accomplished by acoustically releasing the HARP. Once the package is spotted at the surface, recovery will be done directly by the ship using the aft crane or by small boat, to be determined by the Chief Scientist, Chief Boatswain, and Operations Officer. See Appendix 4 for HARP locations.

CTDs

Shipboard CTD casts will be conducted opportunistically when time allows during transits between islands. CTDs will be conducted to a depth of 500m at ten permanent CTD cast stations at Nihoa, Necker, French Frigate Shoals, Gardner Pinnacles, Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Reef, Midway Atoll, and Kure Atoll to examine oceanographic conditions and water quality. See Appendix for CTD locations.

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. (This statement must remain in all project instructions)

Dives are not planned for this project.

E. Applicable Restrictions

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

1. "Take" of Protected Species

- a. Under the Marine Mammal Protection Act and Endangered Species Act 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 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 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. Photos of the incidentally caught animal should be taken to properly identify the species, but the process of taking the photos must not contribute to the further injury of the animal. These photos are for the purposes of internal NMFS verification only, and must not be shared outside of PIFSC or the Office of Protected Resources (i.e., do not post the photos on the internet).
- c. PIFSC has developed mitigation measures for our fisheries and ecosystem research projects to avoid take and 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.

III. Equipment

A. Equipment and Capabilities provided by the ship (itemized)

Equipment: To successfully meet the project objectives, the scientific compliment 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:

2 Deck Cranes

J Frame

CTD Equipment

2 Small boats capable of transporting equipment and gear from ship to shore

Inflatable small boat for landing on rocky shores of islands safely

Handheld VHF radios for ship's small boats

Global Positioning System units for small boats

Storage of up to 700 gallons Unleaded Fuel

Scientific Computer System

Adequate fresh water for gear wash down gear

Iridium phone

Scientific freezer for storage of bait, specimens, and equipment.

Capabilities: It is requested that the ship provide the following:

1. Permission for Scientists to set up gear three days prior to departure, as well as assistance from the ship's Deck Department in craning and staging large gear during loading.
2. An experienced survey technician is requested to conduct day and nighttime shipboard CTDs operations.
3. Small boat and coxswain support will be needed for transfer of personnel and equipment to islands.

B. Equipment and Capabilities provided by the scientists (itemized)

20 foot container

Up to 700 gallons nonethanol gasoline

8 seal cages

To be loaded on islands and brought back to Honolulu:

~1200 5gal buckets – stored in 20 ft container

4 freezers in pallet tubs

1 pallet plastic tables and cot boards

~ 25 pelican cases (various sizes)

2 rack tent poles

~ 16 large pallet tubs field gear (4 ft by 4 ft)

30 36liter nitrogen dewars

20 12v deep cycle batteries (in pallet tubs)

5 Honda generators

18 empty 55 gallon drums

Up to 6 55 gallon drums gasoline

1 18ft RHIB (PHR)

1 5meter inflatable boat (PHR)

1 17ft Boston Whaler boat (FFS)

1 6meter RHIB (FFS)

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

Common Name of Material	Qty	Notes	Trained Individual	Spill control
Gasoline	700 gal		Ship’s engineers	G
Propane	16 cylinders	Various sizes	Bohlander/Sullivan	P
Formaldehyde (37%)	up to 9 gallons		Bohlander/Sullivan	F
Formalin (10%)	up to 20 gallons		Bohlander/Sullivan	

Isopropyl Alcohol (91%)	16 pints		Bohlander/Sullivan	AL
Liquid Nitrogen	1020 liters	In 34L dewars	Bohlander/Sullivan	LN
Betadine	4 gallons		Bohlander/Sullivan	B
DMSO	250 2ml vials 120 5ml vials		Bohlander/Sullivan	DMSO
SAF fixative	100 10ml vials		Bohlander/Sullivan	F
Clorox Bleach	10 gallons		Bohlander/Sullivan	BL
12 v batteries	20		Bohlander/Sullivan	A
Magnum .44	22 rounds	store in secured area	Farry/Sullivan	

C. Chemical safety and spill response procedures

A: ACID

- Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas.
- Ventilate closed spaces before entering them.
- Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
- **Large Spills:** Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
- **Small Spills:** Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
- Never return spills in original containers for re-use.
- Neutralize spill area and washings with soda ash or lime. Collect in a non-combustible container for prompt disposal.
- J. T. Baker NEUTRASORB® acid neutralizers are recommended for spills of this product.

AL: Alcohols

- Extinguish smoking lamp. Remove all sources of ignition.
- Wear appropriate PPE and clothing during cleanup
- Ventilate closed spaces before entering them.
- Use absorbent socks to surround spills or 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.

B: Betadine:

- Use absorbent material and dispose in a proper waste disposal container.
- Finish by spreading water on contaminated surface and use absorbent material to dispose of cleaning water.

BL: Bleach:

- Control spill. Containerize liquid and use absorbents on residual liquid; dispose appropriately.
- Wash area and let dry.
- Breathing protection should be worn in enclosed, and/or poorly ventilated areas until hazard assessment is complete.

DMSO:

- Combustible material. Keep away from heat. Keep away from sources of ignition.
- Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
- Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

F: Formalin/Formaldehyde/Fixatives

- Ventilate area of leak or spill. Remove all sources of ignition.
- Wear appropriate personal protective equipment.
- Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible.
- Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container.
- Do not use combustible materials, such as saw dust.

G: Gasoline

- Evacuate nonessential personnel and remove or secure all ignition sources.
- Carefully contain and stop the source of the spill, if safe to do so. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material.
- Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation.

LN: Liquid nitrogen

- Wear appropriate PPE (closed-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 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: Propane

- Evacuate the immediate area.
- Eliminate any possible source of ignition and provide maximum ventilation.
- Shut off source of propane if possible.

Inventory of Spill Kit supplies

Product Name	Amount	Chemicals it is useful against	Amount it can clean up
Absorbent Pad and sock	18	A, AL, B, BL, DM, F, G	~ 4L
Dust pan	1 set	A, AL, B, BL, DM, F, G	n/a
Goggles	3 pair	All	n/a
Loose absorbent	20 lb	A, AL, B, BL, DM, F, G	6 gal
Nitrile Gloves	6 pair	All	n/a
Plastic bags	5	All	

D. Radioactive Materials

No Radioactive Isotopes are planned for this project.

E. Inventory (itemized) of Radioactive Materials

N/A

V. Additional Projects

A. Supplementary (“Piggyback”) Projects

This project will transfer personnel and supplies to Laysan Island for FWS/ABC and to Kure Atoll for DLNR. See appendix for cooperating agencies’ cargo.

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
- 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 7 days after the completion of a project to discuss the overall success and shortcomings 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.oma.noaa.gov/fleeteval.html> and provides a "Submit" button at the end of the form. Submitted form data is deposited into a spreadsheet used by OMAO management to analyze the information. Though the complete form is not shared with the ships', specific concerns and praises are followed up on while not divulging the identity of the evaluator.

VIII. Miscellaneous

A. Meals and Berthing

The ship will provide meals for the scientists listed above. Meals will be served 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, NF 57-10-01 (3-14)) 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>.

All NHSQs submitted after March 1, 2014 must be accompanied by [NOAA Form \(NF\) 57-10-02 - Tuberculosis Screening Document](#) in compliance with [OMAO Policy 1008](#) (Tuberculosis Protection Program).

The completed forms should be sent to the Regional Director of Health Services at the applicable Marine Operations Center. The NHSQ and Tuberculosis Screening Document should reach the Health Services Office no later than 4 weeks prior to the start of the project to allow time for the participant to obtain and submit additional information should health services require it, before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of either form. Ensure to fully complete each 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.

The participant can mail, fax, or email the forms to the contact information below. Participants should take precautions to protect their Personally Identifiable Information (PII) and medical information and ensure all correspondence adheres to DOC guidance (http://ocio.os.doc.gov/ITPolicyandPrograms/IT_Privacy/PROD01_008240).

The only secure email process approved by NOAA is [Accellion Secure File Transfer](#) which requires the sender to setup an account. [Accellion's Web Users Guide](#) is a valuable aid in using this service, however to reduce cost the DOC contract doesn't provide for automatically issuing full functioning accounts. To receive access to a "Send Tab", after your Accellion account has been established send an email from the associated email account to accellionAlerts@doc.gov requesting access to the "Send Tab" function. They will notify you via email usually within 1 business day of your approval. The "Send Tab" function will be accessible for 30 days.

Contact information: Include only the Pacific OR Atlantic Office as applicable.

Regional Director of Health Services
Marine Operations Center – Atlantic
439 W. York Street
Norfolk, VA 23510
Telephone 757-441-6320
Fax 757-441-3760
Email MOA.Health.Services@noaa.gov

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

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 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 ship 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 email 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 through the ship's Commanding Officer 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.

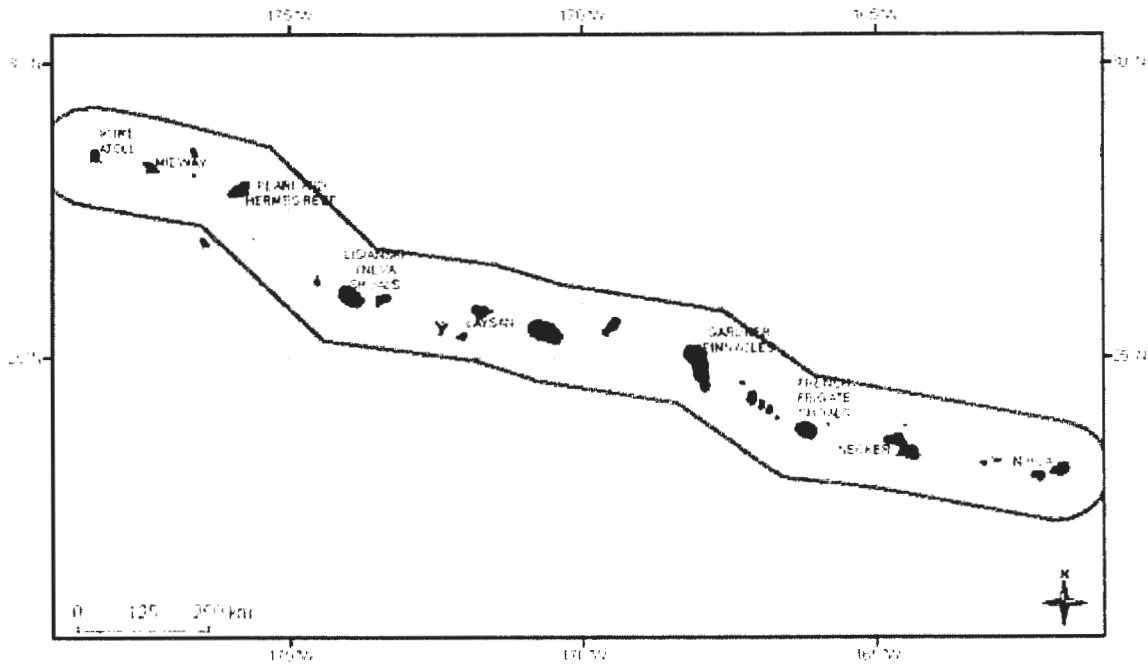
Non-NOAA personnel using the ship's computers or connecting their own computers to the ship's network must complete NOAA's IT Security Awareness Course within 3 days of embarking.

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 15-06.



Appendix 2: Cargo list (electronically attached file)

Appendix 3: Opportunistic CTD cast locations

Site	Location
Nihoa CTD	22° 32.000'N 162° 00.000'W
Necker CTD	23° 11.099'N 164° 42.562'W
FFS CTD	23° 34.000'N 166° 18.000'W
Gardner Pinnacles CTD	24° 08.000'N 167° 40.000'W
Maro Reef CTD	25° 00.000'N 170° 00.000'W
Laysan CTD	25° 34.000'N 171° 32.000'W
Lisianski CTD	25° 50.000'N 173° 40.000'W
PHR CTD	27° 40.000'N 175° 49.700'W
Midway CTD	28° 06.001'N 177° 21.300'W
Kure CTD	28° 12.000'N 178° 20.001'W

Appendix 4: HARP locations

Site	Location
PHR HARP	27° 44.462'N 175° 33.588'W
Jaggar HARP	19° 22.99'N 156° 59.99'W