



U.S. DEPARTMENT OF COMMERCE
 National Oceanic and Atmospheric
 Administration
 Pacific Islands Fisheries Science Center
 1845 Wasp Blvd. Bldg. 176 • Honolulu, Hawaii
 96818

FINAL Project Instructions

Date Submitted: September 20, 2016
Platform: NOAA Ship *Oscar Elton Sette*
Project Number: SE-16-07 (OMAO)
Project Title: Insular Bottom Fish Survey
Project Dates: October 13 – 27, 2016

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Approved by: *Michael Seki* Dated: 9/21/16
 Michael Seki, Ph.D., Director
 Pacific Islands Fisheries Science Center

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



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I. Overview

A. Brief Summary and Project Period

NOAA Ship *Oscar Elton Sette* will be engaged as support for a Pacific Islands Fisheries Science Center (PIFSC), National Marine Fisheries Service (NMFS), project from October 13 - 27, 2016, for a total of 15 days at sea (DAS).

The focus of this mission is to support the first operational survey of Deep-7 bottomfish stock across the Main Hawaiian Islands using the Modular Optical Underwater Survey System (MOUSS) fishery-independent sampling gear. The MOUSS builds and improves upon previous efforts with the Baited Stereo-Video Bottom Camera System (BotCam), which has been effectively used to collect fishery-independent species-specific size-structured abundance data on bottomfish in the Main Hawaiian Islands.^{1,2}

Both MOUSS and surface-tethered DropCam Instrument Packages (DCIPs) will be utilized during this mission. The MOUSS will be deployed and recovered from PIFSC 19' small boats launched from *Oscar Elton Sette*. The DCIP will be deployed and recovered using *Oscar Elton Sette* deck equipment. MOUSS sampling will be concentrated within the State of Hawaii Bottomfish Restricted Fishing Areas (BRFAs). Each MOUSS will remain on the seafloor for a minimum of 15 minutes at each sampling station.

B. Days at Sea (DAS)

Of the 15 DAS scheduled for this project, 15 DAS are funded by a Line Office Allocation. This project is estimated to exhibit a Low Operational Tempo.

C. Operating Area

The area of scientific operations encompasses waters around the Main Hawaiian Islands. The state's Bottom Fish Restricted Fishing Areas (BFRAs) will be the focus of this mission, with alternate workable weather-sheltered areas chosen as necessary. Surveys will be conducted in water depths of 75 to 400 meters.

The project will target specific areas (grid cells) following a stratified-random sampling approach in an effort to best characterize bottomfish abundance across the survey domain (*Appendix 1*).

Daily site selection will be largely weather dependent. The Station/Waypoint List for these grids is presented as an attached spreadsheet file (*Appendix 2*). Upon

¹ Moore, C. H., Drazen, J. C., Kelley, C. D., Misa, W. F. X. E. (2013) Deepwater marine protected areas of the main Hawaiian Islands: establishing baselines for commercially valuable bottomfish populations. *Marine Ecology Progress Series*, 476: 167-183.

² Sackett, D. K., J. C. Drazen, V. N. Moriwake, C. D. Kelley, B. D. Schumacher, and W. F. X. E. Misa. (2014) Marine protected areas for deepwater fish populations: an evaluation of their effects in Hawai'i. *Marine Biology* 161:411-425.

request, a file format suitable for direct upload to the ship’s navigation software may be provided to the Command prior to departure.

D. Summary of Objectives

The MOUSS platform will collect stereoscopic video data to support fishery-independent estimates of species-specific, size-structured abundance for the Main Hawaiian Islands Deep-7 bottomfish stock.

The objectives of the project are:

1. Deploy MOUSS from *Oscar Elton Sette*-based PIFSC 19’ SAFE Boats to collect stereoscopic video data to support fishery-independent estimates of species-specific, size-structured abundance for the Main Hawaiian Islands Deep-7 bottomfish stock focusing in the State of Hawaii Bottom Fish Restricted Fishing Areas (BRFAs).
2. Deploy surface-tethered DropCam Instrument Packages (DCIPs) from the *Oscar Elton Sette* for data collection and to test additional camera sensors and equipment. Anticipated tempo is 4 -12 deployments per day, not to interfere with Objective 1.

E. Participating Institutions

- NOAA Pacific Islands Fisheries Science Center:
 - Science Operations Division (SOD)
 - Fisheries Research and Monitoring Division (FRMD)
 - Ecosystem Sciences Division (ESD)
- Joint Institute for Marine and Atmospheric Research (JIMAR)
- Hawaii Institute of Marine Biology (HIMB)

F. Personnel / Science Party

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Barlow, James	Coxswain/Gear Specialist	10/13/16	10/27/16	M	NOAA/SOD	USA
Bliss, LT Kelli-Ann	Gear Specialist	10/17/16	10/27/16	F	NOAA/ESD	USA
Demarke, Christopher	Operations Lead / Gear Specialist	10/13/16	10/27/16	M	JIMAR/SOD	USA
Driskell, Rory	Gear Specialist	10/13/16	10/27/16	M	NOAA/SOD	USA
Giorli, Giacomo	Gear Specialist	10/13/16	10/27/16	M	HIMB	ITA
Giuseffi, Louise	Coxswain/Gear Specialist	10/13/16	10/27/16	F	NOAA/SOD	USA

McVay, LTJG David	Gear Specialist	10/13/16	10/27/16	M	NOAA/SOD	USA
Miller, Dianna	Gear Specialist	10/13/16	10/27/16	F	JIMAR/SOD	USA
Norris, Erik	Gear Specialist	10/13/16	10/17/16	M	JIMAR/SOD	USA
Reardon, Russell	Project Leader	10/13/16	10/27/16	M	JIMAR/SOD	USA
Richards, Benjamin	Science Advisor	10/13/16	10/27/16	M	NOAA/FRMD	USA
Taylor, Jeremy	Gear Specialist	10/13/16	10/27/16	M	JIMAR/SOD	USA

G. Administrative

1. Points of Contact

Project Leader:
 Russell Reardon
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Ship Operations Officer:
 LT Anthony Imberi
OPS.Sette@noaa.gov
 NOAA Ship *Oscar Elton Sette*
 1897 Ranger Loop, Building 184, Honolulu, HI 96818
 808-389-5695 (cell)

2. Diplomatic Clearances

None Required.

3. Licenses and Permits

The Science Advisor will ensure the appropriate authorizations are secured for all planned scientific operations prior to the start of the project. These authorizations include:

NEPA: This project meets the requirements of NOAA Administrative Order (NAO) Series 216-6, Environmental Review Procedures, Sections 5.05 and 6.03c.3(a) for Categorical Exclusions (CE) for Research Programs. (PIFSC-201600xx--Memo for the Record in process).

ESA: Section 7 consultation for deployment and operation of survey equipment currently in process.

Essential Fish Habitat: Consultation for deployment and operation of survey equipment was initiated with the NOAA Pacific Islands Regional Office on 12 August 2016 and concluded on 24 August with a "Not Likely to Adversely Affect" determination.

State of Hawaii: DLNR Special Activity Permit (No. 2017-35) for the deployment of concrete blocks on the seafloor.

A copy of necessary research permits will be provided to the Command prior to commencing scientific operations.

II. Operations

The Project Leader is responsible for ensuring the scientific staff is trained in planned operations. The Science Advisor is responsible for ensuring that the scientific staff is 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 planned itinerary should be considered as only a guide for survey progression. Operations may be altered as appropriate based on weather, sea conditions, or the progress of the survey itself. Some adjustment is anticipated given the exposure of the survey areas to prevailing conditions. Transit estimates to and from the survey areas have been estimated based on a ship speed of: 9.7 knots westbound, 9.2 knots northbound and southbound, and 8.7 knots eastbound.

- 07 OCT **Ship loading:** Craning of small boat cradles, cradle stand and other large gear as possible.
- 11 OCT **Fuel Delivery/Transfer:** Fuel to be pumped into hip tanks/drums on shore for subsequent loading onto ship after ship's Education/Outreach event.
- 12 OCT **Ship loading:** Loading fuel, gear, boats, and hand carry items.
- 13 OCT **Depart Pearl Harbor:** Embark scientific complement at Ford Island as per ship's sailing board. Depart Pearl Harbor and transit to the Maui Nui survey area (~96 nmi; 11h). Conduct Welcome Aboard Brief, safety drills and operational planning.
- 14-17 OCT **Begin Maui Nui Scientific Operations:** Arrive Maui Nui on 14 October, conduct a full day of scientific operations. Standard daily operations consist of MOUSS deployments/recoveries from small boats (*Appendix 3*). Two 19' SAFE Boats will be launched to conduct small boat MOUSS operations. If conditions in the BRFA do not permit small boat operations, then suitable alternate work areas will be found. Surface-tethered DropCam Instrument Packages (DCIPs) may also be deployed and recovered from *Oscar Elton Sette*, as time and conditions permit (*Appendix 4*). Tempo of ship-based DCIP operations may be increased if weather conditions preclude small boat operations on a given day. Small boats will be fueled daily aboard *Oscar Elton Sette*. Batteries that power the pot haulers will need to be charged overnight in the small boats and will require the use of A/C outlets and power cords on deck.

Unless otherwise specified, these science operations will be standard throughout the project and repeated at each location. In order to avoid repetition, the above description will be omitted from the remainder of the itinerary section.

A small boat (SE-4) personnel transfer to swap scientists (incoming Bliss for departing Norris) is anticipated to occur on 17 October. Location and time to be determined based on weather and survey progress.

Upon conclusion of scientific operations on 17 October, depart for Hawaii Island. (Note: An earlier departure from Maui Nui may be possible/desirable depending upon operational tempo and weather.) Actual survey locations will be distance and weather dependent. Departure from BRFAs (#G, #H, #J) in the Eastern half of the Maui Nui area would allow for overnight transit to Hamakua (#K) or Hilo (#L) BRFAs (~60-145 nmi; 6-16h).

18-20 OCT **Conduct Hawaii Island Scientific Operations:** Arrive Hawaii Island and conduct scientific operations in BRFA's or alternate areas.

Order of BRFA's around Hawaii Island will be distance and weather dependent (60-125nmi; 6-14h); though South Point BRFA (#M) should be attempted on the second day of this three day period since an overnight transit to/from this location from the Maui Nui BRFA's is not possible.

Upon conclusion of scientific operations on 20 October, depart for Maui Nui. Actual destination in the Maui Nui BRFA's will be distance and weather dependent (~60-145 nmi; 6-16h).

21-22 OCT **Complete Maui Nui Scientific Operations:** Complete scientific operations in the BRFA's remaining in Maui Nui. Daily selection of Maui Nui BRFA's is weather dependent (20-85 nmi; 2-9h).

Upon conclusion of scientific operations in Maui Nui on 22 October, depart for Kauai County BRFA's (~160-242 nmi; 18-26h).

23 OCT **Transit day:** This day is intended for transit to Kauai County, however, if weather or operational tempo ultimately dictated differently, an alternative (to make-up or to bank time) would be to use this day to complete a single day of Oahu scientific operations before continuing to Kauai.

24-25 OCT **Conduct Niihau/Kauai Scientific Operations:** Arrive Kauai County and begin scientific operations. Logistically preferred survey order is Niihau (#B), followed by Kauai (#C) due to transit distances between Counties.

Upon conclusion of operations on 25 October, depart for Oahu. Order of BRFA's worked off Oahu will be weather dependent, but BRFA #D off west Oahu is the preferred initial destination (~60-100 nmi; 7-11h).

26 OCT **Begin Oahu Scientific Operations:** Begin scientific operations off Oahu. Logistically preferred survey order is BRFA #D (Kaena) followed by #E (Makapuu) (60 nmi; 7h).

27 OCT **De-couple Small Boat Operations from Ship to complete Oahu Scientific Operations:** Two 19' SAFE boats will be launched to conduct small boat MOUSS operations. The small boats will likely finish the day totally decoupled from the ship (such that a full local operational day may be achieved with local PIFSC shore-based support) while allowing *Oscar Elton Sette* to return to Pearl Harbor at the convenience of the Command. The small boats will be retrieved by PIFSC personnel at a nearby boat ramp and trailered back to Ford Island at the end of the operational day.

Oscar Elton Sette returns to Pearl Harbor at a time deemed appropriate by the Command, disembarking any remaining scientific personnel aboard the ship. **End of project.**

B. Staging and Destaging

Staging: Transfer of small boat fuel is anticipated to occur 11 October. The boat cradle being transferred from *Hi'ialakai* will be loaded 7 October. Assistance from ship personnel for craning aboard other large gear and for loading small boat fuel will be necessary. Small boats will be delivered to the ship 12 October. Hand carried items will be loaded 12 October.

Destaging: Full off-load of all program-provided gear and small boats will begin in coordination with the Command upon return to Pearl Harbor, 27-28 October.

C. Operations to be Conducted

The Project Leader has the authority to revise or alter the technical portion of the instructions as work progresses, provided that, after consultation with the Science Advisor and 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 or scientific integrity of the project. In addition, the Project Leader 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.

Multi-gear fishery-independent surveys are an important component of the efforts to improve the data informing current stock assessment models. The focus of this mission is to sample the Main Hawaiian Islands Deep-7 bottomfish stock using the Modular Optical Underwater Survey System (MOUSS) fishery-independent gear.

MOUSS is an evolution of the existing BotCam developed in 2005 by PIFSC. In contrast to the BotCam, the MOUSS is smaller, lighter, able to attach to different deployment platforms, and captures high-resolution digital footage. This reduction in size and weight allows for hand-davit deployment from small boats, while the use of high-resolution digital video enables more accurate and precise fish identifications and measurements. Project operations will further support the development and evaluation of the MOUSS as an effective and efficient sampling gear for use in operational fishery-independent surveys of deep slope bottomfish assemblages in the Pacific Islands Region.

This mission will target a minimum of 66 primary sampling units (500 m x 500 m grid cells) across the Main Hawaiian Islands. In an effort to best characterize bottomfish size-structured abundance across the survey domain, sampling will follow a stratified-random sampling approach based on habitat type to include a larger area within the region bounded by Main Hawaiian Islands. Specific grid cells will be chosen daily based on weather and local conditions prior to the sampling effort.

Research efforts will require routine small boat operations from *Oscar Elton Sette*. Two program-provided 19-ft SAFE Boats (F1913 *Steel Toe* and F1921 *Rubber Duck*) will be required to support daily MOUSS operations. An *Oscar Elton Sette* small boat coxswain may be required as an alternate coxswain for one of these vessels.

Each SAFE Boat will be launched with two MOUSS units for daylong, replicate deployment and retrieval operations. The minimum anticipated sample size is two MOUSS deployments per grid cell (66 Primary Sampling Units x 2 deployments) for a total of 132 deployments for the project. The general goal, however, is to cover as many grid cells as possible in a work area in order to increase sample size. The operational tempo may be adjusted as the project progresses based on underway efforts, weather, and experience. The standard operating procedures for deployment and recovery of MOUSS from a small boat are attached (*Appendix 3*).

As time and conditions permit, a surface-tethered DropCam Instrument Package (DCIP) may be deployed and recovered from *Oscar Elton Sette* in an effort to test various camera sensors and equipment. The standard operating procedures for a surface-tethered DropCam Instrument Package are attached (*Appendix 4*).

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.

There are no dives planned for this project.

E. Applicable Restrictions

Conditions which preclude normal operations: Poor weather and sea conditions, equipment failure, safety concerns, heavy local vessel traffic, and/or unforeseen circumstances, may alter or prohibit operations as planned. At these times, the Project Leader and Commanding Officer will determine the appropriate plan of action, consulting with the Science Advisor as necessary.

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/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 Project Leader 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.
 - c. PIFSC has developed mitigation measures for its fisheries and ecosystem research cruises 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.
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/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 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:
 - Operational Scientific Computing System (SCS)
 - ThermoSalinoGraph (TSG)
 - Adequate fresh water for gear and small boat wash-down
 - Boat Deck and Aft deck (knuckle) cranes
 - A-Frame, block and winch (for package deployment)
 - J-frame (port) with pot hauler block (for package recovery)
 - Scientific freezer (maintained -30°C to -20°C)
 - Working Wet Lab faucets and drains
 - Iridium phone
 - Ice for food and water jugs on small boats
 - GPS navigational system
 - Depth sounders and recorders
 - Two hip tanks for small boat gasoline storage
 - Drum rack for 2 gasoline drums
 - Sea Catch Toggle Release (or similar) for package deployment
 - Grapple and heaving line for recovering survey package
 - Northwind launch, SE-4
2. **Capabilities:** It is requested that the ship provide the following:
 - a. A Survey Technician that is available 8 hours per day to assist with DropCam Instrument Package deployments and recoveries.
 - b. A small boat coxswain for SE-4 to support a personnel swap (Bliss for Norris) 17 October and to potentially operate one of the

program SAFE Boats to support daily MOUSS operations, as necessary.

- c. Ship deck personnel are required for the deployment and recovery of small boats and tethered camera systems.
- d. Permission for Scientists to ready scientific work spaces (e.g. computer/camera stations) prior to departure.
- e. Assistance from the ship's Deck Department in craning and staging large gear during loading and off-loading.
- f. Support from the Engineering and Deck departments prior to sailing to transfer program-provided gasoline into the ship's hip tanks and into program drums to be used as outboard engine fuel. The gasoline (leftover from previous returning *Sette* and *Hi'ialakai* projects) will be staged in drums to be transferred into the hip tanks (400 gallons), with two drums (100 gallons) to be staged in the racks. The hip tanks will be filled on shore (due to a public outreach event scheduled on the day of transfer).
- g. Support from the Engineering department to fuel small boats daily after scientific boat operations are completed.
- h. Daily lunches and water jugs provided from the Steward Department for small boat operations.

B. Equipment and Capabilities Provided by the Scientists

1. **Equipment:** The program's full equipment list is presented in *Appendix 5* (attached file).
2. **Capabilities:** In addition to scientific expertise, the program will provide an experienced coxswain for at least one SAFE Boat and routine boat and outboard engine maintenance.

IV. Hazardous Materials

A. Policy and Compliance

The Project Leader 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 SDS 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. SDS 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

See Appendix 6.

C. Chemical Safety and Spill Response Procedures

See *Appendix 7*.

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

No Supplementary Projects are planned.

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*

1. OMAO Data
2. Program Data - *Under Development*
The project will follow the current PIFSC data management plans, which comply with NOAA requirements. Contact Nori Shoji (noriko.shoji@noaa.gov), Director, PIFSC Science Operations Division, for PIFSC data policy updates.

B. Responsibilities: *Under Development*

VII. Meetings, Vessel Familiarization, and Project Evaluations

- A. **Pre-Project Meeting:** The Project Leader, Science Advisor 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 Project Leader 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 conducting 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 Project Leader, Science Advisor and members of the scientific party and is normally arranged by the Operations Officer and Project Leader.
- D. **Project Evaluation Report:** Within seven days of the completion of the project, a Customer Satisfaction Survey is to be completed by the Project Leader. The form is available at <https://sites.google.com/a/noaa.gov/omao-intranet-dev/operations/marine/customer-satisfaction-survey> and provides a "Submit" button at the end of the form. It is also located at https://docs.google.com/a/noaa.gov/forms/d/1a5hCCkgIwaSII4DmrHPudAehQ9HqhRqY3J_FXqbJp9g/viewform. 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 three times daily beginning one hour before scheduled departure, extending throughout the project, and ending two hours after the termination of the project. Packed lunches and water jugs will be required for scientists on all full-day small boat operations. 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 Project Leader. The Project Leader 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 Project Leader 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 Project Leader 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 Project Leader will ensure that all non NOAA or non-Federal scientists aboard also have proper orders. It is the responsibility of the Project Leader 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 (03-14)) must be completed in advance by each participating scientist. The NHSQ can be obtained from the Project Leader 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:

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 Project Leader 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

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 steel-toed boots. The

ship's Operations Officer should be consulted by the Project Leader to ensure members of the scientific party report aboard with the proper attire.

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 program and worn when required.

All scientists will comply with standing safety regulations of PIFSC and that of the vessel's standing orders from the Commanding Officer.

D. Communications

A progress report on operations prepared by the Project Leader may be relayed to the program office. Sometimes it is necessary for the Project Leader to communicate with another vessel, aircraft, or shore facility. Through various means of communications, the ship can usually accommodate the Project Leader. 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 *NMAO 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 these 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 prior to embarking. Arrangements to take the Course and/or achieve

security clearance for any non-NOAA computers should be coordinated with PIFSC administration well in advance of the project.

F. Foreign National Guests Access to OMAO Facilities and Platforms

All foreign national access to the vessel shall be in accordance with NAO 207-12 and RADM De Bow's March 16, 2006 memo (<http://deemedexports.noaa.gov>). National Marine Fisheries Service personnel will use the Foreign National Registration System (FNRS) to submit requests for access to NOAA facilities and ships. The Departmental Sponsor/NOAA (DSN) is responsible for obtaining clearances and export licenses and for providing escorts required by the NAO. DSNs should consult with their designated Line Office Deemed Export point of contact to assist with the process.

Full compliance with NAO 207-12 is required.

Responsibilities of the Project Leader:

1. Provide the Commanding Officer with the email generated by the Servicing Security Office granting approval for the foreign national guest's visit. (For NMFS-sponsored guests, this email will be transmitted by FNRS.) This email will identify the guest's DSN and will serve as evidence that the requirements of NAO 207-12 have been complied with.
2. Escorts – The Project Leader is responsible to provide escorts to comply with NAO 207-12 Section 5.10, or as required by the vessel's DOC/OSY Regional Security Officer.
3. Ensure all non-foreign national members of the scientific party receive the briefing on Espionage Indicators (NAO 207-12 Appendix A) at least annually or as required by the Servicing Security Office.
4. Export Control - Ensure that approved controls are in place for any technologies that are subject to Export Administration Regulations (EAR).

The Commanding Officer and the Project Leader will work together to implement any access controls necessary to ensure no unlicensed export occurs of any controlled technology onboard regardless of ownership.

Responsibilities of the Commanding Officer:

1. Ensure only those foreign nationals with DOC/OSY clearance are granted access.
2. Deny access to OMAO platforms and facilities by foreign nationals from countries controlled for anti-terrorism (AT) reasons and individuals from Cuba or Iran without written approval from the Director of the Office of Marine and Aviation Operations and compliance with export and sanction regulations.

3. Ensure foreign national access is permitted only if unlicensed deemed export is not likely to occur.
4. Ensure receipt from the Project Leader or the DSN of the FNRS or Servicing Security Office email granting approval for the foreign national guest's visit.
5. Ensure Foreign Port Officials, e.g., Pilots, immigration officials, receive escorted access in accordance with maritime custom to facilitate the vessel's visit to foreign ports.
6. Export Control - 8 weeks in advance of the project, provide the Project Leader with a current inventory of OMAO controlled technology onboard the vessel and a copy of the vessel Technology Access Control Plan (TACP). Also notify the Project Leader of any OMAO-sponsored foreign nationals that will be onboard while program equipment is aboard so that the Project Leader can take steps to prevent unlicensed export of Program controlled technology. The Commanding Officer and the Project Leader will work together to implement any access controls necessary to ensure no unlicensed export occurs of any controlled technology onboard regardless of ownership.
7. Ensure all OMAO personnel onboard receive the briefing on Espionage Indicators (NAO 207-12 Appendix A) at least annually or as required by the Servicing Security Office.

Responsibilities of the Foreign National Sponsor:

1. Export Control - The foreign national's sponsor is responsible for obtaining any required export licenses and complying with any conditions of those licenses prior to the foreign national being provided access to the controlled technology onboard regardless of the technology's ownership.
2. The DSN of the foreign national shall assign an on-board Program individual, who will be responsible for the foreign national while on board. The identified individual must be a U.S. citizen and a NOAA or DOC employee. According to DOC/OSY, this requirement cannot be altered.
3. Ensure completion and submission of Appendix C (Certification of Conditions and Responsibilities for a Foreign National Guest) as required by NAO 207-12 Section 5.03.h.

IX. APPENDICES

- Appendix 1:* Operating Area for SE-16-07: Main Hawaiian Islands Bottom Fish Restricted Fishing Areas (BFRAs)
- Appendix 2:* Station/Waypoint List (Coordinates in Latitude, Longitude: Degree-Minutes) (*Attached File*)
- Appendix 3:* Standard Operating Procedures for the Deployment and Recovery of a Modular Optical Underwater Survey System (MOUSS) from a 19' SAFE Boat (*Attached File*)
- Appendix 4:* Standard Operating Procedures for the Deployment and Recovery of a Surface-Tethered DropCam Instrument Package (DCIP) (*Attached File*)
- Appendix 5:* Program Equipment List (*Attached File*)
- Appendix 6:* Section IV.B. Hazardous Materials Inventory
- Appendix 7:* Section IV.C. Chemical Safety and Spill Response Procedures

Appendix 1: Operating Area for SE-16-07: Main Hawaiian Islands Bottom Fish Restricted Fishing Areas (BFRAs)

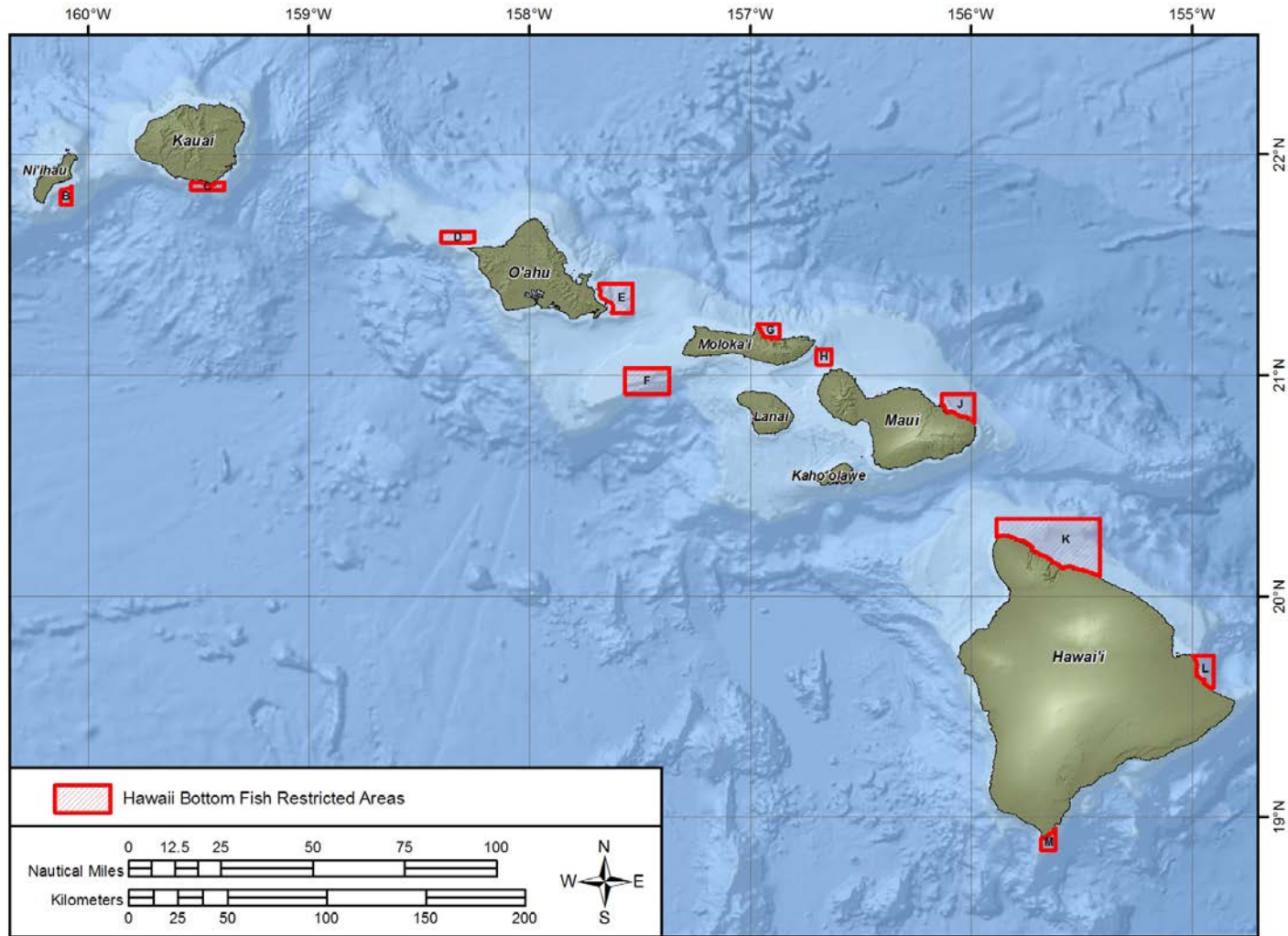


Figure 1. The primary MOUSS survey locations are the depicted Bottom Fish Restricted Fishing Areas (BFRAs)

Appendix 2: Station/Waypoint List (Coordinates in Latitude, Longitude: Degree-Minutes)

(Attached File)

Appendix 3: Standard Operating Procedures for the Deployment and Recovery of a Modular Optical Underwater Survey System (MOUSS) from a 19' SAFE Boat.

(Attached File)

***Appendix 4:* Standard Operating Procedures for the Deployment and Recovery of a Surface-Tethered DropCam Instrument Package (DCIP).**

(Attached File)

Appendix 5: Program Provided Equipment List

(Attached File)

Appendix 6: Section IV.B. Hazardous Materials Inventory

Inventory of Hazardous Materials

Common Name	Quantity	Notes	Trained Individual	Spill Control*
Gasoline, unleaded	1.89 kL (500 gal)	Volatile, Flammable Stored in ship's fantail tank & drum rack	Ship's Chief Engineer	Ship SOP
NiMH Battery Packs (Comprised of Rechargeable Tenenergy D-cell Batteries)	20	14.4v, 16Ah battery packs Sealed non-spillable. Under normal operating conditions, the materials sealed inside should not be a health hazard. Only when these materials are exposed (e.g. case broken) may they pose a hazardous condition.	William Misa	BAT (NiMH)
12V Deep Cycle AGM Battery (SlimLine Compressed AGM 12/185)	6	200Ah, 900A CCA, (22x5x11 inches; 119lb) ea. Sealed non-spillable. Under normal operating conditions, the materials sealed inside should not be a health hazard. Only when these materials are exposed (e.g. case broken) may they pose a hazardous condition.	James Barlow	BAT (LA)

* Spill Control Key is presented in *Appendix 7*.

Appendix 7: Section IV.C. Chemical Safety and Spill Response Procedure

BAT (LA): Batteries (Lead Acid)

No hazards occur during the normal operation of a Lead Acid Battery. Lead Acid Batteries have three significant characteristics:

- 1) They contain an electrolyte in a sealed case which contains diluted sulphuric acid which acts corrosively and may cause severe chemical burns.
- 2) During the charging process or during operation they might develop hydrogen gas and oxygen, which under certain circumstances may result in an explosive mixture.
- 3) They can contain a considerable amount of energy, which may be a source of high electrical current and a severe electrical shock in the event of a short circuit.

Spill or Leak Procedures:

- Wear protective goggles, rubber or PVC gloves, acid-resistant clothing, safety boots.
- Stop flow of material: Contain/absorb small spills with a bonding agent such as dry sand, earth, vermiculite or pads.
- Do not allow discharge of unneutralized acid to sewer, overboard, etc.
- Carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, or liquid reagent, etc.
- Collect neutralized material in sealed container and handle as hazardous waste as applicable.

Direct contact with the ingredients:

- Skin contact: Rinse with soap and water, remove and wash wetted clothing.
- Inhalation of acid mist may damage respiratory tract: Inhale fresh air, seek advice of a medical doctor. If breathing is difficult, give oxygen.
- After contact with the eyes: Rinse under running water for several minutes; seek advice of a medical doctor
- After swallowing: Drink lot of water immediately; swallow activated carbon, do not induce vomiting; seek advice of a medical doctor.

BAT (NiMH): Batteries (Nickel-Metal Hydride)

No hazards occur during the normal operation of Nickel-Metal Hydride Batteries. The battery cell is contained in a hermetically-sealed case. Concentrations of hazardous chemicals vary depending on the state of charge. They contain a caustic electrolyte which includes nickel hydroxide, sodium hydroxide and lithium hydroxide.

Spill or Leak Procedures:

- Wear protective goggles, rubber or PVC gloves, acid-resistant clothing, safety boots.

- Stop flow of material: Contain/absorb small spills with a bonding agent such as dry sand, earth, vermiculite or with pads.
- Avoid contact of internal battery components with acids, aldehydes, and carbamate compounds.
- Do not allow discharge of unneutralized acid to sewer, overboard, etc.
- Carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, or liquid reagent, etc.
- Collect neutralized material in sealed container and handle as hazardous waste as applicable.

Direct contact with the ingredients:

- Skin contact: Rinse with soap and water continuously for 15 minutes, remove and wash wetted clothing.
- Inhalation of acid mist may damage respiratory tract: Inhale fresh air, seek advice of a medical doctor. If breathing is difficult, give oxygen.
- After contact with the eyes: Rinse under running water continuously for at least 15 minutes; seek advice of a medical doctor
- After swallowing: Drink lot of water immediately; swallow activated carbon, do not induce vomiting; seek advice of a medical doctor.

Inventory of Spill Kit Supplies

Product Name	Qty	Chemicals useful against	Amount of clean up possible
Chemical Spill Kit Contents: - Acid Neutralizer (1qt) - Base Neutralizer (1qt) - Halogen Neutralizer (1qt) - Hydrofluoric Neutralizer (1qt) - Surface Cleaner (1qt) - Goggles - Safety Gloves - Vinyl Apron - Sponge - Sprayer Applicator - Instructions	1 1 1 1 1 2 2 1 1 1 1	BAT (NiMH) BAT (LA) Neutralizes the following into Non-Toxic Organic Salts and Water: Acids, Hydrofluoric Acid, Caustics, Halogens and Solvents	Amount neutralized varies with concentration. pH indicating neutralizers eliminate need for pH meters or strips to determine appropriate amount.
HazMat Spill Kit Contents: - 20 Gallon Overpack - HazMat Socks (48") - HazMat Pillows - Yellow HazMat Bonded Pads - Safety Gloves - Goggles - Light Stick - Response Guide Book - Disposal Bags w/ Hazardous Waste Labels	1 6 7 20 5 1 1 1 3	BAT (NiMH) BAT (LA) Chemical & HazMat Fluids	64 L (17 gal) collectively