



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE  
Channel Islands National Marine Sanctuary  
University of California Santa Barbara  
Ocean Science Education Building 514  
Santa Barbara, CA 93106

### FINAL Project Instructions

**Date Submitted:** March 3, 2015

**Platform:** NOAA Ship *Bell M. Shimada*

**Project Number:** SH-15-03 (OMAO)

**Project Title:** Patterns in Deep Sea Coral and Sponge Communities

**Project Dates:** March 08, 2015 to March 22, 2015

Prepared by: \_\_\_\_\_ Dated: \_\_\_\_\_  
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Chief Scientist  
Channel Islands National Marine Sanctuary

Approved by: \_\_\_\_\_ Dated: \_\_\_\_\_  
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Channel Islands National Marine Sanctuary

Approved by: \_\_\_\_\_ Dated: \_\_\_\_\_  
John Armor  
Deputy Director  
Office of National Marine Sanctuaries

Approved by: \_\_\_\_\_ Dated: \_\_\_\_\_  
Captain Douglas D. Baird, Jr., NOAA  
Commanding Officer  
Marine Operations Center – Pacific

## I. Overview

### A. Brief Summary and Project Period

The purpose of the project is to evaluate the spatial correlation of patterns of deep water coral and sponge communities and evaluate potential depth stratification of these species. Numerous management decisions regarding Essential Fish Habitat (EFH) designations and habitat conservation are being made with limited relevant data products. Given the expense of conducting detailed monitoring of coral communities over the scale of the California Current Large Marine Ecosystem (CC LME), we can expect that bottom habitat maps, combined with coral/habitat association models will be used to extend inferences from localized areas of intense study to larger domains of management interest. Therefore, it is critical to understand some of the properties of these locally-derived inferences- properties such as: what is the degree of spatial correlation among coral and sponge communities?

### B. Days at Sea (DAS)

Of the 13 DAS scheduled for this project, 0 DAS are funded by an OMAO allocation, 13 DAS are funded by a Line Office Allocation, 0 DAS are Program Funded, and 0 DAS are Other Agency funded.

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

The operational area will include the waters in and around the Channel Islands National Marine Sanctuary (San Nicholas, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara Islands) as well as San Nicholas Island. Depths will be as shallow as 30m and as deep as 2000m with the majority of operations taking place between 30m and 600m.

### D. Summary of Objectives

There are four primary objectives associated with this project: 1) We will fill existing gaps in our high resolution bathymetry data utilizing the ME70. The primary targets will be waters in and around the Channel Islands National Marine Sanctuary from depths of 100 – 600m. 2) We will make CTD-niskin casts to collect water samples between 50 and 600 meters depth for purposes of estimating aragonite saturation. 3) We will characterize deep-water benthic sites of interest using forward-looking oblique cameras mounted on an ROV. 4) We will collect biological samples of deep-water corals using the ROV.

### E. Participating Institutions

NOAA: NOS – Office of National Marine Sanctuaries, National Centers for Coastal Ocean Science, and Office of Coast Survey; NMFS – Deep Sea Coral Research and Technology Program; OAR – Ocean Exploration and Research; Marine Applied Research and Education; Oxnard Unified School District; Claremont College.

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

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Annis, Michael	Hydrographer-OCS	3/06/2015	3/18/2015	Male	NOAA	U.S.
Etnoyer, Peter	Marine Biologist	3/11/2015	3/18/2015	Male	NOAA	U.S.
Kracker, Laura	Geographer	3/11/2015	3/22/2015	Female	NOAA	U.S.
Shuler, Andrew	Marine Biologist	3/11/2015	3/18/2015	Male	Contractor	U.S.

Weller, Erin	Hydrographer-OCS	3/11/2015	3/22/2015	Female	NOAA	U.S.
Wickes, Leslie	Marine Biologist	3/11/2015	3/18/2015	Female	Contractor	U.S.
Lauermann, Andy	ROV Operator	3/11/2015	3/18/2015	Male	Contractor	U.S.
Rosen, Dirk	ROV Operator	3/11/2015	3/18/2015	Male	Contractor	U.S.
Holz, Steve	ROV Operator	3/11/2015	3/18/2015	Male	Contractor	U.S.
Botman, Rick	ROV Operator	3/11/2015	3/18/2015	Male	Contractor	U.S.
Caldow, Chris	Marine Biologist	3/12/2015	3/22/2015	Male	NOAA	U.S.
Sarah Raskin	Teacher	3/12/2015	3/18/2015	Female	Oxnard Unified School District	U.S.
Sautter, Will	Physical Scientist	3/12/2015	3/22/2015	Male	Contractor	U.S.
Williams, Branwen	Biological Oceanographer	3/12/2015	3/18/2015	Female	Academic	Canada
Parks, Devyn	Marine Biologist	3/18/2015	3/22/2015	Female	Academic	U.S.

G. Administrative

1. Points of Contacts:

Chief Scientist - Chris Caldow  
Channel Islands National Marine Sanctuary  
UC Santa Barbara, Bldg 514  
Santa Barbara, CA 93106-6155  
Phone: (805) 893-6419  
[chris.caldow@noaa.gov](mailto:chris.caldow@noaa.gov)

Project Operation Lead (Mapping) – Laura Kracker  
National Centers for Coastal Ocean Science  
1305 East-West Hwy. (SSMC4, N/SCI-1)  
Silver Spring, MD 20910  
Phone: (301) 713 3028 X228  
[laura.kracker@noaa.gov](mailto:laura.kracker@noaa.gov)

Project Operation Lead (Coral Survey & Collections) – Peter Etnoyer  
National Centers for Coastal Ocean Science  
219 Ft. Johnson Rd  
Charleston, SC 29412  
Phone: (843) 762-8645  
[peter.etnoyer@noaa.gov](mailto:peter.etnoyer@noaa.gov)

Operations Officer – LT Zachary Cress (206) 427-2374  
NOAA Ship *Bell M. Shimada*  
Ops.Bell.Shimada@noaa.gov

2. Diplomatic Clearances

None Required.

3. Licenses and Permits

This project will be conducted under two Scientific Research Permits (U.S.) issued by the National Marine Sanctuary Program. The project requires permits for the collection and possession of deep water corals from within the Federal Marine Reserves around the Channel Islands National Marine Sanctuary (Permit

## II. Operations

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

### A. Project Itinerary:

Actual survey and ground truthing locations will be made available to the Operations Officer during the daily operations meeting. There will initially be 1-2 days allocated for a patch test of the ME70. These operations will commence during the day. Subsequently ME70 operations will be primarily in the evening/nighttime hours with ROV operations during the day.

### B. Staging and Destaging:

ROV equipment will be loaded on the vessel by ship's crane in Port Hueneme the day following its arrival (March 11, 2015). Destaging of the ROV will occur upon arrival back in port on March 22, 2015 and all gear will be removed from the vessel by March 22, 2015 in Port Hueneme.

### C. Operations to be Conducted:

## Objectives

- (1) Map deep-coral and sponge habitat in CINMS using ME70
- (2) Deploy the CTD-rosette near *Lophelia pertusa* aggregations for analyses of seawater carbonate chemistry to 600 meters depth
- (3) Characterize benthic habitat with respect to corals and sponges using an ROV
- (4) Collect samples of *Lophelia pertusa* and other coral colonies using an ROV
- (5) Host VIPs, media and a teacher-at-sea as part of education and outreach initiative. Attendees will learn about marine science, survey technology, the sanctuary, and pressing marine resource issues.

## Deep Sea Coral Site Selection

Deep-sea coral target sites at Carrington Point, Footprint and Piggy Bank were identified from surveys conducted by NMFS Fisheries Ecology Division and Fisheries Resources Division in 2010 and 2011, respectively. These surveys revealed diverse communities of sponges and coral, including abundant small aggregations of the cosmopolitan reef-building coral *Lophelia pertusa*. *L. pertusa* aggregations were characterized for their extent and condition using high-resolution still photography and video imaging. The proposed surveys aboard Bell Shimada in March will revisit these sites of known occurrences to document changes in extent and condition of the coral and to collect specimens for further analyses.

Carrington Point is a series of rocky ridge features on the north side of Santa Rosa Island at mesophotic depths (50-150 m). The proposed study area is outside marine reserve boundaries. Aggregations of large sea fans corals *Eugorgia rubens* have been identified previously in this area. At least one large sea fan colony will be collected at the site by ROV. A target is set for 3 slow moving (< 0.5 knots) photo/video transects by ROV of five to ten minutes duration. Five to seven ten-minute transects are preferred.

The Footprint is a rocky ridge with an area of approximately 10 km<sup>2</sup> in the southern Anacapa Passage. Extending from a base depth of 500 to 600 meters, the shallowest portion of the ridge is found at 80 meters, with the peak becoming progressively deeper toward the southeast to approximately 400 m. Proposed surveys will be focused on the peak of this feature, where the vast majority of *L. pertusa*

aggregations have been found. The target for deployment will be at the deepest known occurrence, with the ROV following the ridge to the northwest to other known aggregations. The general direction of ROV operations will be from deep to shallow, working along the ridge in a northerly direction to deploy temperature loggers, photo document corals, and collect *Lophelia pertusa*. A target is set for 3 slow moving (< 0.5 knots) photo/video transects by ROV of five to ten minutes duration. Five to seven ten-minute transects are preferred.

Piggy Bank Seamount is located nearby the Footprint, approximately 4.5 km to the southwest of the Footprint, and 30 km<sup>2</sup> in area, Piggy Bank peaks at 275 m and descends to 900 m. Similar to the Footprint, *Lophelia* has only been found within 60 m of the peak. These dives will be dedicated to sampling *Lophelia pertusa*, and Acanthogorgia sea fans. A target is set for 3 slow moving (< 0.5 knots) photo/video transects by ROV of five to ten minutes duration. Five to seven ten-minute transects are preferred.

When large *L. pertusa* aggregations are found, still imagery with lasers will be used to capture the full extent. In areas of particularly high abundance collections will be made with a horizontal basket mounted to the base on the front of the remotely operated vehicle (ROV). Collections will be limited to approximately 10 small colonies to comply with permits obtained from NOAA's Office of National Marine Sanctuaries (CINMS-2014-003).

Travel between primary targets will be used to transect for benthic invertebrate characterization. Collections may be made opportunistically for gorgonian corals for taxonomic identification, age and growth, and paleo-climate studies.

#### **Water Sampling and CTD Casts**

The primary objective of this project is to collect water samples within close proximity to *Lophelia* aggregations for analyses of carbonate chemistry. When large aggregations are identified during ROV surveys, navigational targets will be set by the ROV team to return to for water sampling. Following recovery of the ROV, the ship will travel to and hold position above these targets.

The water-sampling rosette with SBE19*plus* CTD and 12 10L niskin bottles will be lowered using the ship's winch and fired autonomously at pre-selected depths. Time-provided, this will be repeated at additional targets. Upon retrieval of the CTD-rosette, water will be sampled for pH, taken aboard the ship, and preserved for total alkalinity and dissolved inorganic carbon.

#### **ME70 Testing and Data Acquisition for Seafloor Mapping** (contact: [laura.kracker@noaa.gov](mailto:laura.kracker@noaa.gov))

It is expected that the ME70 on *Bell Shimada* is largely untested for seafloor mapping. Therefore, 1-2 days may be required to evaluate the system and conduct patch tests. Beam configuration files (.xml) are available (Randy Cutter, Tom Weber). If the system is set up in "Fisheries mode" only, a Matlab bottom detection algorithm (Tom Weber – updated version) will be applied to extract bottom depths from the .raw files and export as .gsf files, resulting in depth soundings and backscatter data for further processing.

A first order task will be to verify installation parameters and ME70 setup. DGPS, POS MV, ME70 and software configurations will be reviewed with survey and electronics technicians to assess DGPS integration with POS MV; reference points / vessel offsets; status of surface sound speed sensor (integration and calibration) and Hypack integration. Specifically, POS MV offsets showing lever arms and mounting angles and sensor mounting will be examined, as well as ME70 offsets applied in the ME70 control software (transducer, GPS and MRU offsets). As this ship has been used for marine mammals surveys in the past, attention will be paid to the position of the POS MV antennas in relation to observation structures, as this was suspected of causing heading drop outs on the Pisces. If available, Hypack integration with the ME70 would result in real-time bathymetry, efficient line planning, and good communication with the bridge.

Ship maneuvers will be required to complete ME70 patch tests – pitch and yaw over a distinct feature and roll over a flat surface with results analyzed in Caris. In addition, comparisons with a reference surface and a GAMS calibration will be conducted. Real time surface sound speed will be checked against water column sound speed from XBT and CTD casts (sound speed corrections to the ME70 will be examined). Water column sound speed will be collected via XBT and/or CTD every four hours or as water conditions change during seafloor mapping. Data processing will include tide corrections and computing total propagated uncertainty. The Caris vessel file will be appended.

To maintain data quality, it is requested that visiting scientists on the mapping shift be permitted access to the ship network to allow for access across the ME70, XBT and CTD computers. In addition, access to relevant recent reports, diagrams of POS MV and ME70 configuration, ship surveys, and records of Simrad actions related to the ME70 will aid in troubleshooting. Interference from other sounders and ADCP will be assessed. Securing these systems during mapping operations may be required.

*We will likely start with some prep work during the first couple days to accomplish this testing, with follow up testing as schedules permit. As initial kinks are worked out, we would move to night time operations to survey areas of interest. I would recommend a night time shift of three persons (2 CCMA, 1 OCS) – depending on what we find out in terms of skills required. In addition, a survey tech should be available during nighttime mapping as CTD (or XBT) casts will be conducted every four hours. ROV dives or drop camera operations for confirmation of bottom type, would be worked into the daytime schedule.*

#### 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.

Dives are not planned for this project.

#### E. Applicable Restrictions

Conditions which preclude normal operations:

Equipment failure: Mitigation – at sea repair, switch to ROV or ME70 operations

Poor weather: Mitigation – switch to more protected area or suspend operations.

Safety concerns: Mitigation – discuss at safety briefing or with ships command.

### III. **Equipment** Equipment and Capabilities provided by the ship (itemized)

- 1) Dynamic Positioning System: Ability to hold heading and position required for ROV operations
- 2) Hand held radios for communications with bridge and deck.
- 3) Monitor and keyboard for XBT
- 4) Simrad ME70, EK60
- 5) Access to information on DGPS integration with POS MV; reference points / vessel offsets; ship surveys; status of surface sound speed sensor (integration and calibration) and Hypack integration with ME70.
- 6) Access to the ship network across the ME70, XBT and CTD computers.
- 7) Survey support (24 hours) to conduct CTD and XBT casts and data processing. CTD/XBT casts will be conducted every 4 hours while mapping is in progress.
- 8) 220VAC single phase electrical connection for ROV winch
- 9) 110VAC single phase electrical connection for ROV monitors and recorders

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

- 1) Beagle ROV (MARE group): 600 lb; 5 ft long x 3 ft wide x 4 ft high
- 2) ROV umbilical winch (MARE group): 1,400 lb; 6 ft long x 4 ft wide x 4 ft high
- 3) ROV clump weight (MARE group): 700 lb
- 4) Centerboard-mounted Lingquest Tracking system (SWFSC) hydrophone for USBL navigation, to connect to existing USBL cables
- 5) CARIS, ArcGIS, Hypack/Hysweep, FMGT
- 6) Computers for conducting corp scientific operations (3 rackmounted PCs; 4 standard PC laptops; 1 Mac laptop; 1 MacAir laptop; 1 Cappuccino PC)
- 7) Monitor feed to bridge for ROV tracking and navigation

**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
Ethyl alcohol	4 x 500 ml	Biological samples	Peter Etnoyer	A

Common Name of Material	Qty	Notes	Trained Individual	Spill control
(95%)				
Mercuric Chloride	1 x 10g	Water samples	Leslie Wickes	M
Formaldehyde (5%)	3L	Biological samples	Leslie Wickes	F

#### C. Chemical safety and spill response procedures

##### A: ALCOHOL

- 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.

##### M: Mercury

- Spills: Pick up and place in a suitable container for reclamation or disposal in a method that does not generate dust. Sprinkle area with sulfur or calcium polysulfide to suppress mercury. Use Mercury Spill Kit if need be. There will be enough Mercasorb to clean up 10X more than what will be brought.

##### F: Formaldehyde

- Spills: Work with formalin should be in a well ventilated area. Use eye protection and latex gloves. In case of contact, flush eyes or skin with cold-water. For a small spill, absorb with inert dry material and place in appropriate waste container. If necessary, neutralize residue with dilute solution of sodium carbonate. There will be enough sodium carbonate to clean up 5 times more volume than what will be brought on board.

#### Inventory of Spill Kit supplies

Product Name	Amount	Chemicals it is useful against	Amount it can clean up
Mercasorb	500 g	Mercury	75 g
Sodium carbonate	500 g	Formaldehyde	5 L

#### D. Radioactive Materials

No Radioactive Isotopes are planned for this project.

#### V. Additional Projects

- Supplementary ("Piggyback") Projects  
No Supplementary Projects are planned.
- 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*

We request that the ship's data storage be made available during the project to store all digital data (~3 TB). The science party will transfer that data from the ship storage to scientists' drives at the end of the project. The scientists will be responsible for providing data archives to NGDC as part of the R2R within 12 months of the completion of the project. In order for this to be accomplished five scientist Government computers will need network access to the ship's data storage device so that the data can be moved from the acquisition computer to storage, and subsequently accessed by other Government computers tasked with data post-processing. The Chief Scientist will be provided a Full Local Administrative account for each of these computers to assist the Ship's ET in adding them to the Ship's network.

**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 hrs before or 7 days after the completion of a project to discuss the overall success and short comings of the project. Concerns regarding safety, efficiency, and suggestions for future improvements shall be discussed and mitigations for future projects will be documented for future use. This meeting shall be attended by the ship's officers, applicable crew, the Chief Scientist, and members of the scientific party and is normally arranged by the Operations Officer and Chief Scientist.
- D. Project Evaluation Report

Within seven days of the completion of the project, a Customer Satisfaction Survey is to be completed by the Chief Scientist. The form is available at <http://www.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](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](mailto: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](mailto:MOP.Health-Services@noaa.gov)

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

#### C. Shipboard Safety

Hard hats 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

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 Chief Scientist:

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 Chief Scientist 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 Chief Scientist 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 Chief Scientist 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 Chief Scientist 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 Chief Scientist of any

OMAO-sponsored foreign nationals that will be onboard while program equipment is aboard so that the Chief Scientist can take steps to prevent unlicensed export of Program controlled technology. The Commanding Officer and the Chief Scientist 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)

## **VIII. Appendices**

### **Appendix A: Station locations for OA work and water sampling**

1. Figures, maps, tables, images, etc.





The figures above and below show the cruise itinerary for Leg 1, March 12 – March 18.



## 2. Station/Waypoint List (coordinates in Latitude, Longitude: degree-minutes)

The following are from the pre-determined locations shown in the map above that will be surveyed during the periods listed as ROV in Section 2C. The targets are listed in their planned order of occurrence from March 13 (Footprint) to March 18 (Piggy Bank).

Footprint, South of Anacapa Passage, 33° 57.604' N, 119° 28.642' W  
 Santa Rosa Southeast, 33° 54.113' N, 119° 58.131' W  
 Carrington Point, North of Santa Rosa 34° 4.404' N, 120° 7.665' W  
 Piggy Bank, South of Anacapa Passage, 33° 55.516' N, 119° 28.915' W