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: April 7, 2016

Platform: NOAA Ship *Bell M. Shimada*

Project Number: SH-16-06 (OMAO)

Project Title: Patterns in Deep Sea Coral and Sponge Communities

Project Dates: April 28, 2016 to May 9, 2016

Prepared by: CALDOW.CHRISTOPHER.D.1379754526 Digitally signed by CALDOW.CHRISTOPHER.D.1379754526 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER, cn=CALDOW.CHRISTOPHER.D.1379754526 Date: 2016.04.08 09:59:49 -07'00' Dated: _____

Chris Caldow
Chief Scientist
Channel Islands National Marine Sanctuary

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Matt Brookhart
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CDR Brian W. Parker
Commanding Officer
Marine Operations Center – Pacific

I. Overview

A. Brief Summary and Project Period

To-date over 50% of the Channel Islands National Marine Sanctuary remains uncharacterized yet anecdotal evidence suggests that these areas are home to large populations of commercially important species including fish and lobster as well as fragile ecosystem components such as deep sea corals. With a mandate to preserve and maintain this special place, sanctuary management requires a detailed understanding of the distribution, abundance and condition of the resources at the site. During this mission we will simultaneously acquire fish and seafloor data with the use of the vessel's ME70 and EK60 sonars together with the Office of Coast Survey's REMUS-600 mapping AUV. This information will help inform resource protection issues and will provide valuable input into the next revision of the sanctuary management plan.

B. Days at Sea (DAS)
Of the 12 DAS scheduled for this project, _0_ DAS are funded by an OMAO allocation, _12_ 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 Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara Islands). Depths will be as shallow as 30m and as deep as 1000m with the majority of operations taking place between 30m and 350m.

D. Summary of Objectives

There are three primary objectives associated with this project:

1) To fill existing gaps in high resolution bathymetry data utilizing the ME70 (depths of 30 – 350m) and the Coast Survey mapping AUV (depths to 400m). The AUV will both complement the vessel acquired data with deeper water acquisition as well as provide more highly resolved data over features of interest identified during the mission.
2) To simultaneously acquire water column data indicating the presence, relative abundance and distribution of fishes associated with various seafloor features utilizing the EK60.
3) To capitalize on this opportunity to educate the local community about sanctuary resources and the pressures they face.

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; Oxnard Unified School District.

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	4/26/2016	5/10/2016	Male	NOAA	U.S.
Caldow, Chris	Chief Scientist	4/27/2016	5/10/2016	Male	NOAA	U.S.

Campanella, Fabio	Post Doc – Fish acoustics	4/27/2016	5/10/2016	Male	Contractor	Italy
Downs, Rob	AUV Project Manager	4/26/2016	5/10/2016	Male	NOAA	U.S.
Freedman, Ryan	Marine Biologist	4/27/2016	5/10/2016	Male	Contractor	U.S.
Gorton, Julia	Student	4/27/2016	5/10/2016	Female	College of Charleston	U.S.
Johnson, Kayla	Hydrographer-OCS	4/27/2016	5/10/2016	Female	NOAA	U.S.
Huxtable, Nichia	Teacher	4/27/2016	5/10/2016	Female	Fillmore Unified School District	U.S.
Kracker, Laura	Geographer	4/26/2016	5/10/2016	Female	NOAA	U.S.
Sautter, Will	Physical Scientist	4/27/2016	5/10/2016	Male	Contractor	U.S.
Wakefield, Waldo	Research Fisheries Biologist	4/27/2016	5/8/2016	Male	NOAA	U.S.
Watters, Diana	Research Fisheries Biologist	4/27/2016	5/10/2016	Female	NOAA	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

Project Operation Lead – 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

Operations Officer – LT Timothy Sinquefield (541) 867-8776
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 the manager's permit (U.S.) issued by the Channel Islands National Marine Sanctuary. The project requires permits for the deployment of both XBTs and the AUV as well as for the vessel to transit within one nautical mile of the islands. The work will be conducted under the Channel Islands Manager's Permit (CINMS-2014-001; valid through January 2018).

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:

We will transit to the islands from San Francisco on April 28, 2016. Upon arrival a patch test will take place at a selected location. After a patch test, mapping operations will commence in one of the Areas of Interest (AOI). The AOIs are shown in Figure 1 by the priority of their acquisition. The goal will be acquire data in the areas of highest priority dependent on weather and sea state. If conditions are too rough in the areas of highest priority (e.g. AOI Priority 1 or northern San Miguel Island), operations will move to the next area of highest priority (e.g. Priority 2 or south San Miguel Island). This procedure will continue step-wise down the list of priority AOIs as per current sea conditions.

Operation of the ME70 and EK60 will occur 24 hours/day with stoppages for an afternoon (1500-1600) deployment and subsequent recovery (0700-0800) of the AUV. Actual survey locations will be made available to the Operations Officer during the daily operations meeting. These locations will be determined based on: sea-state; holidays in the data; features identified the day prior; and remaining gaps. Line plans and waypoints for the top 3 priority areas can be viewed in Appendix A (Figure 1 and Table 1)

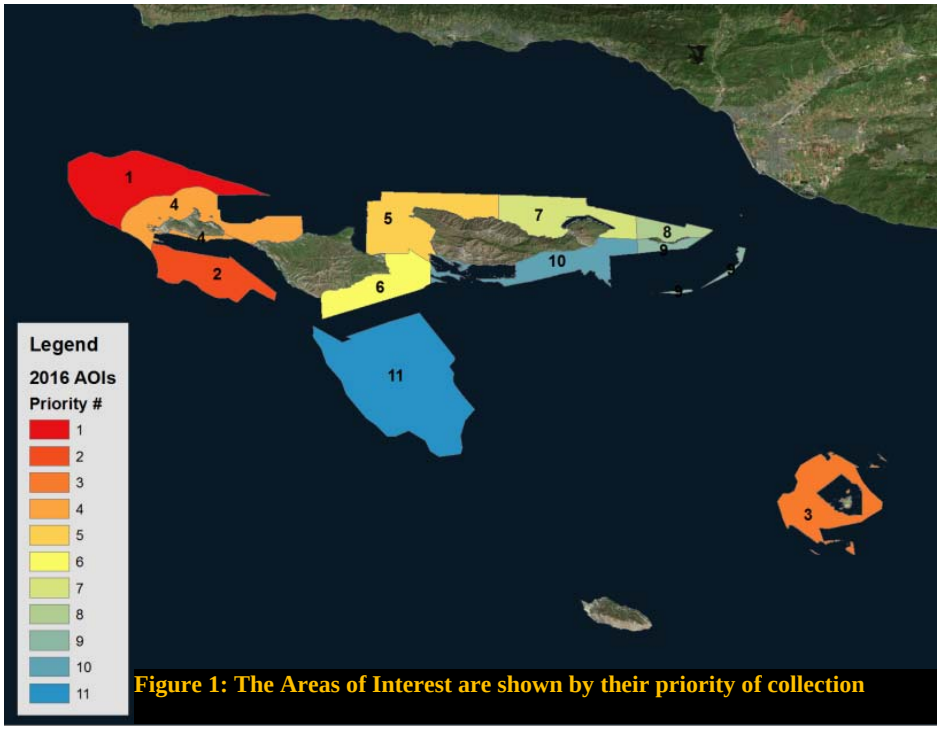

Figure 1: The Areas of Interest are shown by their priority of collection

A small boat personnel transfer is planned for the morning of May 8th. The boat transfer will be arranged by the Channel Islands National Marine Sanctuary off the R/V Sharkcat. Waldo Wakefield of the science party will depart at that time.

B. Staging and Destaging:

We request a meeting with the operations officer and the survey techs one day prior to departure. This meeting would cover status and operation of the ME70. AUV equipment will be loaded on the vessel by ship's crane in San Francisco following its arrival (April 26, 2016). Destaging of the AUV will occur upon arrival back in port on May 09, 2016 and all gear will be removed from the vessel by May 10, 2016 in San Francisco as well.

C. Operations to be Conducted:

ME70 Testing and Data Acquisition for Seafloor Mapping (contact: laura.kracker@noaa.gov)
Based on an assessment of last year's survey output, there remains some concern around dropouts in the GPS feed and instrument offsets in relation to the ME70. Therefore we would like to dedicate some advance time to evaluate the system, conduct patch tests, and review configuration files. In addition, we would like to implement the ME70-Hypack integration for data collection which would result in real-time bathymetry, efficient line planning, and good communication with the bridge. This would require confirmation that the repeated bridge/survey monitor setup on previous cruises is operational. The Hypack software suite may also be used to process patch test data as an alternate method to Caris (see below). There is also a new feature in Hypack that may allow periodic AUV positional updates to be displayed. This is untested at this time, so it should not be considered completely operational.
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 and Coast Survey personnel 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, we hope to review the position of the POS MV antennas on the observation structures with ship personnel, as this was suspected of causing heading drop outs last year on the Shimada and previously on the Pisces.

Ship maneuvers will be required to complete ME70 patch tests – navigation timing, 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. In addition, a survey tech should be available during nighttime mapping as CTD (or XBT) casts will be conducted every four hours.

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.

REMUS-600 AUV Data Acquisition (contact: rob.downs@noaa.gov)
The REMUS-600 AUV will conduct multibeam sonar (Kongsberg EM-3002) seafloor mapping surveys in priority areas as designated by the scientific staff. Additionally, the Coast Survey AUV team will program the AUV to conduct tests to evaluate system performance, including sonar patch and extinction tests, as part of some of the larger mapping missions. These tests should have no additional impact on the shipboard operations beyond normal AUV launch and recovery.

The AUV will be programmed to conduct overnight mapping missions at fixed altitude above the seafloor based on operating depth, coverage requirements, and desired data resolution. During missions the AUV will be programmed to survey hourly to update its GPS fix and broadcast its position and status to the shipboard console via Iridium satellite telephone. Under normal operations there is no requirement for the ship to maintain station or proximity to the AUV. However, in the event of a system fault or extended periods without expected communications with the AUV (i.e., three missed schedule Iridium calls) the ship may be requested to transit to the AUV operating area to allow communications to be established and potentially recover the AUV.

The desired AUV operating schedule is daily launch at 1500-1600 and morning recovery at 0700-0800. This maximizes the time the AUV is on survey, while maintaining consistent launch and recovery times, and providing adequate time for post-mission activities, AUV charging, and mission planning.

AUV mission plans, including launch and recovery locations, expected surfacing locations, and duration will be made available prior to launch to the ship's and science crew. It is expected that AUV launch operations will require approximately 30 minutes once all crew is mustered and the ship is on station. Recovery operations can be expected to take 45-60 minutes depending on sea state. The AUV is typically programmed to maintain station at depth (loiter) at the programmed end point to allow for possible delays in the ship's arrival for recovery. The loiter can be terminated and the AUV brought to the surface using acoustic modem communications when the ship and crew are ready to recover.

It is requested that a CTD cast be conducted in the AUV's operating area prior to launch and the cast data provided to the AUV team for pre-loading on the AUV.

Data products generated from by the AUV will coordinated with the science staff.

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, refocus acquisition to remaining systems.

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

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

III. Equipment

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

1) Dynamic Positioning System:
2) Hand held radios for communications with bridge and deck.
3) Monitor, computer, keyboard and launcher 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.

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

1) REMUS-600 AUV: 670 lbs; 12 ft long x 12.75 inches diameter
    a. Lithium Ion Batteries enclosed in housing
        i. Four Battery Banks (21.6 Kg Net Weight Lithium Ion)
2) AUV Cart: 4x2x1.5 ft (LxWxH)
3) Shipboard Communications Console

a. Dimensions: 16” x 22” x 30”
b. Power Requirements: Two 120VAC outlets
c. Cable Connections:
i. Antenna Cable – 75 ft (to Mast Box)
ii. High Speed Data Cable – 50 ft (to AUV)
iii. Acoustic Comms Cable – 75 ft (to Accoms Bottle/Ranger)

4) Charging Console
a. Dimensions: 11” x 22” x 30”
b. Power Requirements: One 240VAC/30Amp (NEMA L6-30R receptacle) and one 120VAC outlet
c. Cable Connection: 45 ft charging cable (to AUV)

5) Mast Box (GPS, Iridium, Wireless Ethernet)
a. To be mounted outside on upper deck
b. Dimensions: 10” x 15” x 5”

6) Accoms Bottle/Ranger
a. To be mounted outside on main deck
b. Dimensions: 18” in length x 6 “ diameter
c. Includes handheld acoustic modem with approximately 30 ft cable to be hand-deployed over the side for acoustic communications with the AUV (ship must be stopped)

7) Mission Planning and Data Processing laptop computers

8) Tools & Spares Kit
a. Dimensions: 42” x 25” x 20”, approx. 150 lbs

9) Computers for conducting core scientific operations (10 standard PC laptops; 1 Cappuccino PC)

10) CARIS, ArcGIS, Hypack/ Hysweep

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**
Lithium Ion Batteries	4 Banks (21.6 kg net weight)	Batteries are enclosed in AUV housing	Rob Downs	B

C. Chemical safety and spill response procedures

B: Batteries

- Inhalation: Remove from exposure, rest and keep warm.
- Skin contact: Wash off skin thoroughly with water. Remove contaminated clothing and wash before reuse.
- Eye contact: Irrigate thoroughly with water for at least 15 minutes
- Ingestion: Wash out mouth thoroughly with water and give plenty of water to drink.
- Fire:
  - Extinguishing Media Use appropriate extinguishing agent for surrounding fire. For damaged or ruptured cells, use Class D extinguisher or other appropriate agent. Class C fire extinguishers should be used to extinguish electrical fires. Do not use water to extinguish electrical or ruptured cell related fires. Firefighters should wear full protective gear.
- Spill: Clean-Up Procedures: Absorb spill with inert absorbent material (cat litter). Shovel material into appropriate container for disposal. Clean spill area with detergent and water; collect wash water for proper disposal.

Inventory of Spill Kit supplies

Product Name	Amount	Chemicals it is useful against	Amount it can clean up
Kat Litter	10 lbs	Lithium Ion Batteries	24 kg

D. Radioactive Materials

No Radioactive Isotopes are planned for this project.

V. Additional Projects

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*

a. OMAO Data

b. Program Data

B. Responsibilities: *Under Development*

The science party will require access to the science network for transferring data. The scientists will be responsible for providing data archives to NCEI 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.

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.omao.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:

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

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. Appendix A

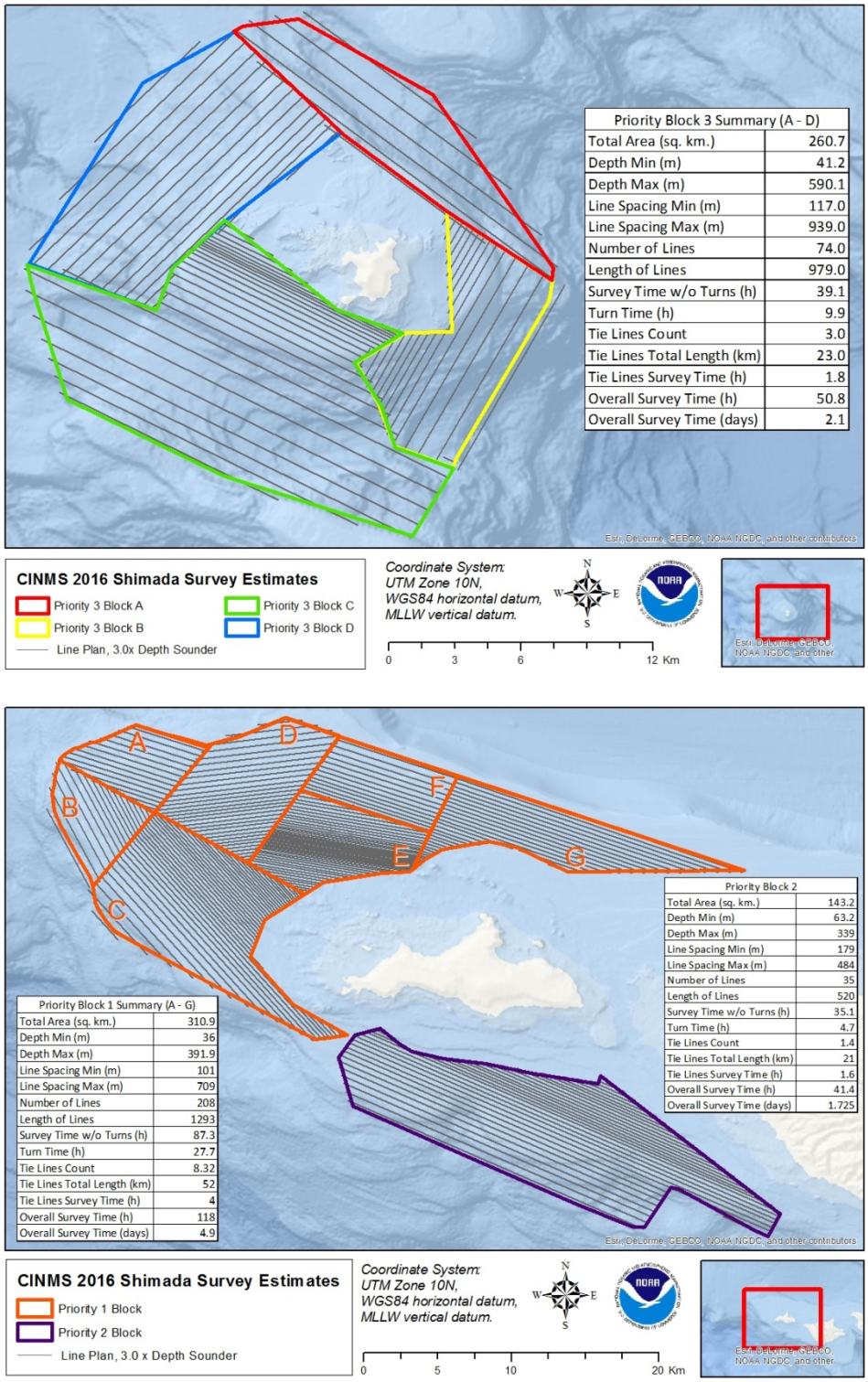

Figure 1. Survey line plans around a) Santa Barbara Island and b) San Miguel Island.

Table 1. Line planning latitude and longitude for top 3 priority areas.

Priority Blocks waypoints					
1 lat	lon	2 lat	lon	3 lat	lon
34.104	-120.6106	33.9799	-120.339	33.4787	-119.1760
34.1118	-120.6151	33.9784	-120.33	33.4853	-119.1742
34.1197	-120.6196	33.977	-120.321	33.4929	-119.1694
34.1275	-120.624	33.9755	-120.313	33.5005	-119.1646
34.1356	-120.6278	33.9741	-120.304	33.5081	-119.1597
34.1443	-120.6299	33.9763	-120.297	33.5157	-119.1549
34.1531	-120.6297	33.9732	-120.29	33.5233	-119.1501
34.1619	-120.6285	33.9677	-120.283	33.5309	-119.1453
34.1705	-120.6258	33.9622	-120.276	33.5385	-119.1405
34.1762	-120.619	33.9568	-120.269	33.5461	-119.1357
34.1793	-120.6106	33.9513	-120.262	33.5534	-119.1306
34.1818	-120.6021	33.9458	-120.255	33.5578	-119.1227
34.1853	-120.5938	33.9404	-120.248	33.5622	-119.1149
34.1888	-120.5855	33.9349	-120.24	33.5666	-119.1071
34.1909	-120.5772	33.9294	-120.233	33.5710	-119.0992
34.1883	-120.5686	33.924	-120.226	33.5291	-119.0552
34.1857	-120.5599	33.9185	-120.219	33.5237	-119.0624
34.1835	-120.5512	33.913	-120.212	33.5183	-119.0695
34.1809	-120.5426	33.9076	-120.205	33.5128	-119.0767
34.1797	-120.534	33.9021	-120.198	33.5074	-119.0839
34.1819	-120.5252	33.8966	-120.19	33.5020	-119.0911
34.1842	-120.5166	33.8899	-120.189	33.4965	-119.0982
34.1877	-120.5083	33.882	-120.194	33.4776	-118.9640
34.1911	-120.4999	33.8831	-120.201	33.4799	-118.9756
34.1945	-120.4916	33.8873	-120.209	33.5049	-119.0129
34.1939	-120.4832	33.8916	-120.217	33.5102	-119.0202
34.1909	-120.4747	33.896	-120.225	33.5155	-119.0274
34.188	-120.4662	33.9003	-120.232	33.5208	-119.0347
34.1851	-120.4577	33.9046	-120.24	33.5261	-119.0419
34.1822	-120.4491	33.9089	-120.248	33.5315	-119.0492
34.1793	-120.4406	33.9071	-120.256	33.5745	-119.0936
34.1765	-120.4321	33.8996	-120.26	33.5768	-119.0850
34.1737	-120.4235	33.8921	-120.265	33.5781	-119.0761
34.1709	-120.415	33.8859	-120.271	33.5788	-119.0673
34.1681	-120.4065	33.8872	-120.28	33.5744	-119.0595
34.1652	-120.3979	33.8906	-120.288	33.5700	-119.0516
34.1624	-120.3894	33.894	-120.296	33.5656	-119.0438
34.1596	-120.3808	33.8974	-120.305	33.5612	-119.0360
34.1568	-120.3723	33.9009	-120.313	33.5568	-119.0281
34.154	-120.3638	33.9045	-120.321	33.5524	-119.0203
34.1512	-120.3552	33.908	-120.33	33.5477	-119.0127
34.1483	-120.3467	33.9116	-120.338	33.5403	-119.0076
34.1455	-120.3381	33.9152	-120.346	33.5329	-119.0024
34.1427	-120.3296	33.9188	-120.354	33.5255	-118.9973
34.1399	-120.3211	33.9224	-120.363	33.5181	-118.9922