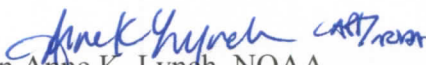




UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration
NOAA Marine and Aviation Operations
Marine Operations Center
439 W. York Street
Norfolk, VA 23510-1114

MEMORANDUM FOR: Master Donn Pratt, NOAA
Commanding Officer, NOAA Ship *Gordon Gunter*

FROM: 
Captain Anne K. Lynch, NOAA
Commanding Officer, NOAA Marine Operations Center-Atlantic

SUBJECT: Project Instruction for GU-15-06
Fall ECOMON

Attached is the final Project Instruction for GU-15-06, Fall ECOMON, which is scheduled aboard NOAA Ship *Gordon Gunter* during the period of October 8 - 25, 2015. Of the 18 DAS scheduled for this project, 18 DAS are funded by a Line Office allocation. This project is estimated to exhibit a Medium Operational Tempo. Acknowledge receipt of these instructions via e-mail to OpsMgr.MOA@noaa.gov at Marine Operations Center-Atlantic.

cc:
Nathan Keith





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

Final Project Instructions

Date Submitted: 24 September 2015

Platform: NOAA Ship *Gordon Gunter*

Project Number: GU 15-06

Project Title: Fall Ecosystem Monitoring Survey

Project Dates: 8 – 25 October 2015

Approved by: Russell W. Bean Date: 9-24-2015
William A. Karp, Ph.D.
Science and Research Director
Northeast Fisheries Science Center

Approved by: Anne K. Lynch Date: 10/5/2015
Captain Anne K. Lynch, NOAA
Commanding Officer
Marine Operations Center – Atlantic

I. Overview

A. Brief Summary and Project Period

The principal objective of the survey is to assess the hydrographic, planktonic and pelagic components of the Northeast U.S. Continental Shelf Ecosystem. Specifically we will quantify the spatial distribution of the following parameters: water currents, water properties, phytoplankton, microzooplankton, mesozooplankton, sea turtles and marine mammals. We will use traditional and novel techniques and instruments. A broad array of measurements of the pelagic ecosystem will be made during the 8 – 25 October 2015 time period.

B. Days at Sea (DAS)

Of the 18 DAS scheduled for this project, 18 DAS are funded by a Line Office Allocation. This project is estimated to exhibit a Medium Operational Tempo.

C. Operating Area

The continental shelf from north of Cape Hatteras, NC, including Georges Bank and the Gulf of Maine, to the Nova Scotia Shelf (including stations in Canada's Exclusive Economic Zone). Stations will be occupied in waters with depths ranging between 15 and 500 meters.

D. Summary of Objectives

Operational objectives are to: (1) collect underway data using TSG, SCS, and ADCP; 2) complete CTD and bongo operations at stations throughout area, (2) collect biological data with bongo plankton nets, (3) collect marine mammal and seabird observations, and (4) collect online data and imagery of phytoplankton and ciliates using Imaging FlowCytobot units.

The Ecosystem Monitoring surveys contribute to stock assessments, protected species assessments, ecosystem assessments, and climate assessments. As such, the surveys are multi-objective. Ichthyoplankton and hydrographic data are collected for stock assessments. A range of ecosystem observations are made, from nutrients and ocean

acidification to marine mammals, and a number of the measurements are used in NEFSC ecosystem assessment products. The ocean acidification and hydrographic measurements are incorporated into the region's climate assessments.

This survey is multidisciplinary and as such will integrate all these operations. The cruise plan will evolve with input from scientists as well as the officers and crew of *Gordon Gunter*. A post-cruise meeting will focus on lessons learned and improvements to make for subsequent surveys of this type.

E. Participating Institutions

NMFS-Northeast Fisheries Science Center
 Woods Hole Oceanographic Institute
 University of Maine
 Canadian Wildlife Service
 Texas A & M University

F. Personnel/Science Party

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Prezioso, Jerome	Chief Scientist.	10/06/2015	10/25/2015	M	NMFS	US
Holzwarth-Davis, Tamara	Lead CTD Specialist	10/06/2015	10/25/2015	F	NMFS	US
Joseph Losoya	Student Volunteer	10/06/2015	10/25/2015	M	Texas A&M University	US
Carter, Lauren	Research Technician	10/06/2015	10/25/2015	M	Integrated Statistics	US
Thomas, Maura	Guest Researcher	10/06/2015	10/25/2015	F	University of Maine	Canada (US permanent resident card)
No one is coming on cruise, only to set-up.	IFloCytobot Specialist	10/06/2015	10/25/2015	?	WHOI	US
NO marine mammal observer is coming on cruise.				?	Integrated Statistics	US
NO marine mammal observer is coming on		10/06/2015	10/25/2015	?	Integrated Statistics	US

cruise.						
Jeannine Winkel	Seabird Observer	10/06/2015	10/25/2015	F	Canadian Wildlife Service	German
No teacher at sea for this cruise				?	?	

G. Administrative

- Points of Contact:
Chief Scientist – Jerome Prezioso NOAA Fisheries 28 Tarzwell Drive
Narragansett, RI 02882, jerry.prezioso@noaa.gov 401 742-0228
Project Operations Leads-Tamara Holzwarth-Davis,
tamara.holzwarth-davis@noaa.gov, 508 495-2113
CO.Gordon.Gunter@noaa.gov {Commanding Officer – *Gordon Gunter*}
Ops.Gordon.Gunter@noaa.gov {Operations Officer – *Gordon Gunter*}
Bill.Karp@noaa.gov {Science and Research Director}
Russell.Brown@noaa.gov {Deputy Science and Research Director}
Nathan.Keith@noaa.gov {NEFSC Vessel Coordinator}
Michael.S.Abbott@noaa.gov {NEFSC Port Captain}
- Diplomatic Clearances
This project involves Marine Scientific Research in waters under the jurisdiction of Canada. Diplomatic clearance has been requested.
- Licenses and Permits
This project will be conducted under a Canadian Foreign Fishing Vessel License # 000003 issued by __DFO____ valid from October 11, 2015 through October 28, 2015.

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:

8 October: Depart MOC-A, Norfolk, VA to commence survey.

25 October: Complete cruise operations outside of Narragansett Bay.

B. Staging and Destaging:

6 October: Arrive and board Gordon Gunter at MOC-A, Norfolk, VA.

7 October: Load and set up scientific equipment and complete CTD and SCS installations.

25 October: Moor at Naval Station Newport, RI. Disembark scientific personnel, and off-load scientific equipment and samples.

C. Operations to be conducted:

The survey consists of 156 random-stratified and fixed Oceanography stations in the Middle Atlantic Bight, Southern New England, Georges Bank and the Gulf of Maine (Table 1, Figure 1). These stations are randomly distributed at varying distances, and as such there is no fixed expectation of number to be covered each day. Rather, the progress of the survey will depend on transit time, sea state, and water depth of the stations, with deeper stations requiring more time to complete operations. Some stations will also have more complex operations scheduled, such as a water cast and a bongo tow, which will increase the amount of time spent on-station. Several of the ship's systems will be running and continuously logging: ADCP, TSG, and EK-60 data from the entire track-line. Marine mammal and seabird observers will be stationed on the bridge or flying bridge making continual observations during daylight hours.

Oceanographic station locations and cruise track will be provided to the vessel prior to sailing to allow the navigation officer ample time to load this information into the navigation systems. The Commanding Officer and Chief Scientist will jointly modify the track during the cruise as weather conditions and time constraints vary to best achieve the cruise objectives. **Highest reasonable cruising speeds should be employed to improve the potential to complete the cruise missions.**

Oceanography Stations: A Seabird CTD profiler attached to a bongo net will be deployed at approximately 125 stations. In addition, a Seabird CTD profiler will be deployed alone to collect data at deep stations (>200 m) and to collect water for salinity calibrations, nutrient, DIC and total alkalinity analysis (Figure 2). A 911 CTD will be deployed at a subset of stations

for more detailed oceanographic data and water for numerous measurements (Figure 3). These deployments will use the oceanographic winch and the CTD computer located in the dry lab.

Acoustic Survey Operations: EK-60 operations will be conducted continuously throughout the cruise track at the highest safe transit speed possible, and during scientific gear deployments.

Scientific Computer System (SCS): *Gordon Gunter's* SCS system is a PC-based server, which continuously collects and distributes scientific data from various navigational, oceanographic, meteorological, and sampling sensors throughout the cruise. The SCS EventLog program has also been configured for NEFSC Fisheries Acoustic Survey operations, and will be used by the scientists to document all operational events (*e.g.*, beginning and end of gear deployments). Date and time for data collections from computers, instrumentation, and logsheets recording will be synchronized using the vessel's GPS master clock and Dimension IV software. The NEFSC and *Gordon Gunter's* ET are responsible for ensuring data collection and logging.

1. Continuous Underway Sampling:

1.1. SCS

1.1.1. Navigational, meteorological, and environmental data will be archived throughout the cruise using *Gordon Gunter's* Scientific Computer System (SCS).

1.1.2. Ship Requirements

1.1.2.1. SCS system should be running for duration of cruise

1.2. ADCP

1.2.1. Current speed and direction

1.2.2. Backscatter at 150 kHz

1.2.3. Ship Requirements

1.2.3.1. ADCP running during cruise and logging data

NOTE: The ADCP is set with an external trigger to be a slave with the EK60. There still is some minor interference we are seeing on the 120kHz EK60.

1.3. Flow-through system

1.3.1. TSG - salinity, temperature, density

1.3.2. pCO₂ system surface water and atmospheric CO₂

1.3.3. Discrete samples – drawn from flow-through by scientists

1.3.3.1. DIC – dissolved inorganic carbon

1.3.3.2. salt – for salinity calibrations

1.3.4. Ship Requirements

1.3.4.1. Flowthrough system cleaned prior to cruise (freshwater flush)

1.3.4.2. Flowthrough system running during cruise and logging data

1.3.4.3. Ability to draw water samples from system

1.4. Fisheries acoustics

1.4.1. EK-60

1.4.2. Ship Requirements

1.4.2.1. Acoustics running during cruise at all frequencies and logging data

NOTE: Extraneous echo sounders should be turned off to eliminate or at least minimize acoustic interference with the EK60.

1.5. Fisheries acoustics

1.5.1. EK-60

1.5.2. Ship Requirements

1.5.2.1. Both acoustics running during cruise at all frequencies and logging data

NOTE: Extraneous echo sounders should be turned off to eliminate or at least minimize acoustic interference with the EK60.

1.6 Surface observations

1.6.1 Marine mammal observations made during daylight hours by two observers rotating on a 4 hour schedule.

1.6.2 Ship Requirements

1.6.2.1 110 VAC available either on the flying bridge or bridge for the observer's laptop.

1.7 Water Bottle Cast – deployed at subset of stations surface to 500 m or 5 m from bottom

1.7.2 SBE19 – Temperature, conductivity, depth

1.7.3 Water bottles – tripped manually with a messenger for salinity calibrations.

1.7.4 Ship Requirements

1.7.4.1 None

Data: At the end of the cruise the ship will provide the chief scientist with three copies of the data from the EK60 transducer, the ADCP unit and the SCS system. A copy of the SCS data should also be provided to DMS personnel in Woods Hole.

D. Dive Plan

Dives are not planned for this project.

E. Applicable Restrictions

Conditions which would preclude normal operations may include the following:

Adverse weather – Marginal conditions such as high seas and winds that make deploying gear over the side hazardous to personnel, and secondarily to the equipment, warrant having operations suspended until the command deems conditions safe again. One way to mitigate such interruptions would involve coordination between the chief scientist and the command to adjust the cruise track to avoid the worst weather and continue operations in a more sheltered area where they can be conducted safely.

Equipment failures - if scientific, may involve the adjustment of sampling strategies to permit survey operations to continue with functional equipment. Vessel equipment failures will be worked out on an ad hoc basis between the scientists and command to permit survey operations to continue with the understanding that the safety of the vessel ship is always the top priority.

III. Equipment

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

Ship Requirements for Acoustics

Simrad EK60 Scientific Sounder: The Simrad EK60 Scientific Sounder will be the primary sampling gear used during fisheries acoustic surveys for providing species-specific abundance estimates. The EK60 operates four transducers mounted on the retractable keel (18, 38, 120, and 200 kHz split-beam transducers). EK60 data are logged to the EK60 data server, which is on the ship's and scientific networks. RS232 connections are used for navigational (Differential GPS) input. The SCS Event Logger will be used to record all operational events (e.g., begin and end points of transects, stations, gear deployments, and other events that affect the track cruise and vessel speed) during the cruise.

The EK60 will be synchronized to the ADCP and ship's EK60 echo sounders. All extraneous echo sounders need to be turned off to eliminate or at least minimize acoustic interference with the EK60. At the beginning of the cruise, it may be necessary to turn off sounders to determine sources of interference. The ADCP is set with an external

trigger to be a slave with the EK60. There still is some minor interference at 120kHz on the EK60 and thus, the ADCP may need to be turned off at times during the cruise.

Acoustics are running during cruise at all frequencies and logging data.

Scientific Computer System (SCS): *Gordon Gunter's* SCS system is a PC-based server, which continuously collects and distributes scientific data from various navigational, oceanographic, meteorological, and sampling sensors throughout the cruise. The SCS EventLog program has also been configured for NEFSC Fisheries Acoustic Survey operations, and will be used by the scientists to document all operational events (*e.g.*, beginning and end of deployments). Date and time for data collections from computers, instrumentation, and logsheets recording will be synchronized using the vessel's GPS master clock and Dimension IV software. The NEFSC and *Gordon Gunter's* ET are responsible for ensuring data collection and logging.

Ship Requirements for Side Sampling Station and Oceanographic Operations

SBE911 connected to conducting cable on forward winch.
Terminations be checked prior to cruise and redone if necessary.
Slip rings be checked prior to cruise and redone if necessary.

SBE19 connected to conducting cable on aft winch for bongo deployments.
NEMA Data String for CTD Computer.
Disposal of waste water cannot happen before, during, or right after CTD rosette operations.
Smoking is not allowed on Oceanography deck owing to nutrient collections and carbonate chemistry collections.
NEMA Data String to Computer Lab.
Ultra-cold (-80°C) freezer (tested prior to embarkation) for storage of samples.

Ship Requirements for Continuous Underway Sampling

SCS - Navigational, meteorological, and environmental data will be archived throughout the cruise using *Gordon Gunter's* Scientific Computer System (SCS). SCS system should be running for duration of cruise.

ADCP - Running during cruise and logging data.

NOTE: The ADCP is set with an external trigger to be a slave with the EK60. There still is some minor interference we are seeing on the 120kHz EK60.

Flow-through system - TSG - salinity, temperature, density.

Fluorometer – chlorophyll a concentration.

Discrete samples – drawn from flow-through by scientists.

DIC – dissolved inorganic carbon.

chlorophyll a – measured directly.

salt – for salinity calibrations.

Flowthrough system cleaned prior to cruise (freshwater flush).

Flowthrough system running during cruise and logging data.

Ability to draw water samples from system and to plumb in Imaging

FlowCytobot instrument from WHOI.

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

CTD Rosette Operations :

A CTD Rosette will be deployed at subset of stations surface **to a maximum depth of 500 m** or 5 m from bottom; approximately 20-50 locations during the course of the cruise.

SBE911 – salinity, temperature, density.

Fluoroprobe – distinguishes among groups of phytoplankton.

Fluorometer – chlorophyll a concentration.

PAR – for light measurement.

Water bottles – tripped automatically from computer in CTD Lab.

Salt - for salinity calibrations.

Nutrients – N, P, Si, others.

Ocean Carbon – DIC, Total alkalinity.

Phytoplankton species composition.

Microzooplankton species composition.

Oceanography Stations:

CTD/Bongo – deployed at most stations surface to 200 m or 5 m from bottom.

SBE19 – Temperature, conductivity, depth deployed with rosette having 10 ten-liter bottles, and radiometer.

61 cm, 333 micron mesh– zooplankton and ichthyoplankton.

20 cm, 165 micron mesh – microzooplankton and zooplankton (20 stations).

45 kg depressor weight for bongo net deployments.

Continuous Underway Sampling:

Imaging FlowCytobot: An Imaging Flow Cytobot unit will be plumbed into the scientific flow-through system and used throughout the cruise. The unit will require a very small amount of seawater from the flow-through system and 110 VAC.

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
Formaldehyde solution (37%)	2 x 20 liters	Alkalinity, Stored in ship chem. lkr	Jerome Prezioso	F
Ethanol (95%)	4 x 20 liters	Alkalinity, Stored in ship chem. Locker.	Jerome Prezioso	E
Mercuric Chloride	1 x 50 ml.	Located in ship chem. locker.	Lauren Carter	M
Acetone (90%)	2 x 500 ml.	Stored in ship chem. locker.	Maura Thomas	A

C. Chemical safety and spill response procedures

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Formalin/Formaldehyde

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

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*

Protected Resources:

North Atlantic right whale protection: The vessel is requested to adhere to right whale protection regulations. Information on Seasonal Management Area (SMA) and Dynamic Management Area (DMA) regulations and information for protecting right whales from collisions with vessels are provided through the NOAA Protected Resources website (<http://www.nmfs.noaa.gov/pr/shipstrike/>), Right Whale Sighting Advisory System (SAS) website (<http://www.nefsc.noaa.gov/psb/surveys/>), the U.S. Coast Guard's "Notices To Mariners" and NOAA weather radio.

Mariners are urged to use caution and proceed at safe speeds in areas where right whales occur. U.S. Law (50 CFR 224.105) prohibits operating vessels 65 feet (19.8 meters) or greater in excess of 10 knots in Seasonal Management Areas (SMAs) along the U.S. east coast. Mariners are also requested to route around voluntary speed restriction zones, Dynamic Management Areas (DMAs) or transit through them at 10 knots or less. Approaching within 500 yards of right whales is prohibited, unless the Chief Scientist is in possession of an ESA/MMPA permit allowing such approaches.

Whale sightings: Sightings of right whales, or dead or entangled whales of any species, are extremely valuable and reports are urgently requested. Please report all right whale sightings north of the Virginia-North Carolina border to 866-755-6622; right whale sightings south of that border should be reported to 877-WHALE HELP. Right whale sightings in any location may be reported to the U.S. Coast Guard via VHF channel 16.

Protocols for reporting sightings are described in the Guide to Reporting Whale Sightings placard. The placard is available online

(http://www.nefsc.noaa.gov/psb/surveys/documents/20120919_Report_a_Right_Whale.pdf) and laminated copies will be provided by the Protected Species Branch upon request.

It is requested that this placard be kept on the bridge for quick reference and to facilitate rapid reporting (via satellite phone if necessary). Opportunistic sightings of other marine mammal species that are live and well may be reported using the Platforms of Opportunity (POP) forms and protocols. To information regarding the WhaleALERT application <http://stellwagen.noaa.gov/protect/whalealert.html>. For information on reporting a dead whale

http://www.nefsc.noaa.gov/psb/surveys/documents/20120919_Report_a_Dead_Whale.pdf.

Endangered Species Act and Marine Mammal Protection Act reporting requirements:

This reporting is required and is in addition to the reports in the above two sections. If the ship has an interaction with a sturgeon, Atlantic salmon, whale, dolphin, porpoise, marine turtle, or seal (e.g., collision with a whale or bycatch of a sea turtle), the NMFS Greater Atlantic Regional Fisheries Office must be notified within 24 hours of the interaction. All e-mail correspondences should be made to the following e-mail address: incidental.take@noaa.gov. Please indicate in the subject line which protected species was encountered. If the take involves a marine mammal, or sea turtle that is alive, injured and in need of assistance or monitoring, please call the NOAA Northeast Region marine animal hotline at: [866-755-6622](tel:866-755-6622). The chief scientist will be notified before reports are made. If the vessel's company notices an animal that is entangled, injured, in distress, or dead, outside the scope of scientific operations, they should contact the Northeast Regional Office's 24-hour hotline at 866-755-6622 to report the incident and receive further instructions.

Marine turtle, Sturgeon and Atlantic salmon bycatch: All marine turtles, sturgeon and Atlantic salmon taken incidental to fishing activities must be handled, resuscitated (turtles only) and documented according to established procedures in the Endangered Species Act Section 7 Consultation Biological Opinion issued on November 30, 2012. All marine turtles taken incidental to fishing activities must 1) be handled and resuscitated according to established procedures, 2) be clearly photographed (multiple views if possible, including at least one photograph of the head scutes), 3) be identified to the species level, 4) have width and length (carapace notch to notch, and notch to tip) measured in centimeters, 5) have supporting data recorded including GPS or Loran coordinates recorded describing the location of the interaction; time of interaction; date of interaction; condition of the animal upon retrieval (alive uninjured, alive injured, fresh dead, decomposed, comatose or unresponsive); the condition of the animal upon return to the water; GPS or Loran coordinates of the location at which it was released; and a description of the care or handling provided. Live animals shall then be returned to the sea. Dead turtles shall, if feasible, be frozen and returned to the Woods Hole Laboratory.

Marine mammal bycatch: **Please refer to Procedures & Actions for Incidental Takes located in the appendices.** Captured live or injured marine mammals are released from

research gear and returned to the water as soon as possible with no gear or as little gear remaining on the animal as possible. Animals will be released without removing them from the water if possible. Data collection will be conducted in such a manner as not to delay release of the animal(s) and will be limited to species identification, sex identification if genital region is visible, estimated length, disposition at release (e.g., live, dead, hooked, entangled, amount of gear remaining on the animal, etc.) and photographs. When authorized to do so, trained personnel may attempt to obtain a skin sample for genetic analysis using biopsy gear (e.g., cross bow or hand-held pole). Marine mammals incidentally killed during research activities will be retained if suitable storage is available for subsequent examination once the appropriate authorizations are obtained. For dead specimens not retained; 1) be clearly photographed (multiple views if possible, including at least one photograph of the head; 2) be identified to the species level; 3) weigh (kg) and measure (cm) if possible (snout to tail (seals), beak to the notch in the fluke/tail (whales, dolphins and porpoises)); 4) attached a carcass tag; 5) have supporting data recorded including GPS or Loran coordinates describing the location of the interaction; time of interaction; date of interaction; 6) condition of the animal upon retrieval (alive uninjured, alive injured, fresh dead, decomposed, comatose or unresponsive).

Stellwagen Bank: Any artifacts brought aboard the vessel due to fishing in the Stellwagen Bank National Marine Sanctuary must be immediately returned, as near as possible, to the location of interception. An artifact is defined as anything of man-made origin with the exception of modern fishing gear. Stations located within Stellwagen Bank will be identified prior to the cruise and reported to the chief scientist.

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 is usually 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 conducting a meeting no earlier than 24 hours before or 7 days after the completion of the 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 as designated by the Commanding Officer, applicable crewmembers, the Chief Scientist, and members of the scientific party and is normally arranged by the Operations Officer and Chief Scientist.
- D. Project Evaluation Report
Within seven days of the completion of the project, a Customer Satisfaction Survey is to be completed by the Chief Scientist. The form is available at <http://www.oma.noaa.gov/fleeteval.html> and provides a "Submit" button at the end of the form. Submitted form data is deposited into a spreadsheet used by OMAO management to analyze the information. Though the complete form is not shared with the ships', specific concerns and praises are followed up on while not divulging the identity of the evaluator.

VIII. Miscellaneous

A. Meals and Berthing

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

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

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Chief Scientist will ensure that all non NOAA or non Federal scientists aboard also have proper orders. It is the responsibility of the Chief Scientist to ensure that the entire scientific party has a mechanism in place to provide lodging and food and to be

reimbursed for these costs in the event that the ship becomes uninhabitable and/or the galley is closed during any part of the scheduled project.

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

B. Medical Forms and Emergency Contacts

The NOAA Health Services Questionnaire (NHSQ, NF 57-10-01 (3-14)) must be completed in advance by each participating scientist. The NHSQ can be obtained from the Chief Scientist or the NOAA website <http://www.corporateservices.noaa.gov/noaaforms/eforms/nf57-10-01.pdf>.

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

The completed forms should be sent to the Regional Director of Health Services at the applicable Marine Operations Center. The NHSQ and Tuberculosis Screening Document should reach the Health Services Office no later than 4 weeks prior to the start of the project to allow time for the participant to obtain and submit additional information should health services require it, before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of either form. Ensure to fully complete each form and indicate the ship or ships the participant will be sailing on. The participant will receive an email notice when medically cleared to sail if a legible email address is provided on the NHSQ.

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

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

Contact information:
Regional Director of Health Services

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

Prior to departure, the Chief Scientist must provide an electronic listing of emergency contacts to the Operations 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, “croc,” 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.

Foreign National access must be sought not only for access to the ship involved in the project but also for any Federal Facility access (NOAA Marine Operations Centers, NOAA port offices, USCG Bases) that foreign nationals might have to traverse to gain access to and from the ship. The following are basic requirements.

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 (all that apply)

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

Table 1. Station/Waypoint List (coordinates in Latitude, Longitude: degree-minutes)

Name	Region	Strata	Deployment	Protocol	Latitude		Longitude	
					Degrees	Minutes	Degrees	Minutes
1-MAB-1	MAB	1	CTD/Bongo	STD	36	24.966	74	50
2-MAB-1	MAB	2	CTD/Bongo	STD	35	34.986	75	10
2-MAB-2	MAB	2	CTD/Bongo	STD	36	29.964	74	55
3-MAB-1	MAB	3	CTD/Bongo	STD	36	29.964	75	40
3-MAB-2	MAB	3	CTD/Bongo	STD	35	44.982	75	25
4-MAB-1	MAB	4	CTD/Bongo	STD	36	44.958	74	40
5-MAB-1	MAB	5	CTD/Bongo	STD	37	34.938	74	45
5-MAB-2	MAB	5	CTD/Bongo	STD	37	9.948	75	25
5-MAB-3	MAB	5	CTD/Bongo	STD	37	24.942	75	0
5-MAB-4	MAB	5	CTD/Bongo	STD	37	9.948	74	55
5-MAB-5	MAB	5	CTD/Bongo	STD	36	44.958	75	15
6-MAB-1	MAB	6	CTD/Bongo	STD	36	44.958	75	50
6-MAB-2	MAB	6	CTD/Bongo	STD	37	4.95	75	40
7-MAB-1	MAB	7	CTD/Bongo	STD	38	4.926	74	5
7-MAB-2	MAB	7	CTD/Bongo	STD	38	24.918	73	35
8-MAB-1	MAB	8	CTD/Bongo	STD	37	54.93	74	55
8-MAB-2	MAB	8	CTD/Bongo	STD	38	44.91	74	35
8-MAB-3	MAB	8	CTD/Bongo	STD	38	29.916	74	45
8-MAB-4	MAB	8	CTD/Bongo	STD	37	59.928	74	35
9-MAB-1	MAB	9	CTD/Bongo	STD	38	29.916	75	0
10-MAB-1	MAB	10	CTD/Bongo	STD	38	59.904	72	55
10-MAB-2	MAB	10	CTD/Bongo	STD	38	49.908	73	30
10-MAB-3	MAB	10	CTD/Bongo	STD	38	59.904	73	15
11-MAB-1	MAB	11	CTD/Bongo	STD	38	59.904	73	30
11-MAB-2	MAB	11	CTD/Bongo	STD	39	14.898	73	35
11-MAB-3	MAB	11	CTD/Bongo	STD	39	19.896	73	20
11-MAB-4	MAB	11	CTD/Bongo	STD	39	39.888	73	50

12-MAB-1	MAB	12	CTD/Bongo	STD	38	49.908	74	55
13-MAB-1	MAB	13	CTD/Bongo	STD	39	29.892	73	55
13-MAB-2	MAB	13	CTD/Bongo	STD	39	14.898	74	30
14-SNE-1	SNE	14	CTD/Bongo	STD	39	29.892	72	30
15-SNE-1	SNE	15	CTD/Bongo	STD	39	54.882	72	0.
15-SNE-2	SNE	15	CTD/Bongo	STD	39	59.88	72	35
15-SNE-3	SNE	15	CTD/Bongo	STD	39	29.892	72	55
15-SNE-4	SNE	15	CTD/Bongo	STD	39	34.89	72	55
16-SNE-1	SNE	16	CTD/Bongo	STD	40	9.876	72	55
16-SNE-2	SNE	16	CTD/Bongo	STD	39	54.882	73	20
16-SNE-3	SNE	16	CTD/Bongo	STD	40	29.868	72	35
16-SNE-4	SNE	16	CTD/Bongo	STD	40	4.878	73	0.
17-SNE-1	SNE	17	CTD/Bongo	STD	40	29.868	73	50
18-SNE-1	SNE	18	CTD/Bongo	STD	40	4.878	71	50
19-SNE-1	SNE	19	CTD/Bongo	STD	40	34.866	70	55
19-SNE-2	SNE	19	CTD/Bongo	STD	40	39.864	71	5
19-SNE-3	SNE	19	CTD/Bongo	STD	40	19.872	71	15
19-SNE-4	SNE	19	CTD/Bongo	STD	40	24.87	71	25
19-SNE-5	SNE	19	CTD/Bongo	STD	40	14.874	71	30
20-SNE-1	SNE	20	CTD/Bongo	STD	40	59.856	71	10
20-SNE-2	SNE	20	CTD/Bongo	STD	41	14.85	71	20
20-SNE-3	SNE	20	CTD/Bongo	STD	40	59.856	71	35
21-SNE-1	SNE	21	CTD/Bongo	STD	41	4.854	71	30
22-SNE-1	SNE	22	CTD/Bongo	STD	39	54.882	69	45
23-SNE-1	SNE	23	CTD/Bongo	STD	40	29.868	69	45
23-SNE-2	SNE	23	CTD/Bongo	STD	40	39.864	69	0.
23-SNE-3	SNE	23	CTD/Bongo	STD	40	59.856	69	5.
23-SNE-4	SNE	23	CTD/Bongo	STD	40	19.872	69	30
23-SNE-5	SNE	23	CTD/Bongo	STD	40	54.858	69	5.
24-SNE-1	SNE	24	CTD/Bongo	STD	40	39.864	70	5.
24-SNE-2	SNE	24	CTD/Bongo	STD	40	34.866	69	30
24-SNE-3	SNE	24	CTD/Bongo	STD	41	9.852	70	30
25-SNE-1	SNE	25	CTD/Bongo	STD	41	19.848	69	30
26-GB-1	GB	26	CTD/Bongo	STD	40	29.868	67	45
26-GB-2	GB	26	CTD/Bongo	STD	40	9.876	68	45
27-GB-1	GB	27	CTD/Bongo	STD	40	29.868	68	35
27-GB-2	GB	27	CTD/Bongo	STD	40	49.86	67	15
27-GB-3	GB	27	CTD/Bongo	STD	40	49.86	67	20
27-GB-4	GB	27	CTD/Bongo	STD	40	39.864	68	15
27-GB-5	GB	27	CTD/Bongo	STD	40	49.86	67	55

27-GB-6	GB	27	CTD/Bongo	STD	41	4.854	67	35
28-GB-1	GB	28	CTD/Bongo	STD	40	49.86	66	45
28-GB-2	GB	28	CTD/Bongo	STD	41	54.834	65	45
29-GB-1	GB	29	CTD/Bongo	STD	41	49.836	66	5.
29-GB-2	GB	29	CTD/Bongo	STD	41	54.834	65	55
29-GB-3	GB	29	CTD/Bongo	STD	41	44.838	66	20
29-GB-4	GB	29	CTD/Bongo	STD	41	54.834	66	25
29-GB-5	GB	29	CTD/Bongo	STD	41	39.84	67	5.
29-GB-6	GB	29	CTD/Bongo	STD	41	9.852	67	5.
29-GB-7	GB	29	CTD/Bongo	STD	41	4.854	66	40
29-GB-8	GB	29	CTD/Bongo	STD	41	34.842	67	0.
30-GB-1	GB	30	CTD/Bongo	STD	41	24.846	67	10
30-GB-2	GB	30	CTD/Bongo	STD	40	49.86	68	15
30-GB-3	GB	30	CTD/Bongo	STD	41	9.852	68	10
30-GB-4	GB	30	CTD/Bongo	STD	41	19.848	68	5
30-GB-5	GB	30	CTD/Bongo	STD	41	49.836	67	0.
30-GB-6	GB	30	CTD/Bongo	STD	41	14.850	68	10
30-GB-7	GB	30	CTD/Bongo	STD	41	34.842	67	25
31-GB-1	GB	31	CTD/Bongo	STD	41	29.844	68	0.
31-GB-2	GB	31	CTD/Bongo	STD	41	54.834	67	30
31-GB-3	GB	31	CTD/Bongo	STD	41	44.838	68	10
32-GB-1	GB	32	CTD/Bongo	STD	42	4.83	66	45
32-GB-2	GB	32	CTD/Bongo	STD	42	4.830	66	40
33-GOM-1	GOM	33	CTD/Bongo	STD	41	9.852	68	50
34-GOM-1	GOM	34	CTD/Bongo	STD	41	54.834	69	0.
34-GOM-2	GOM	34	CTD/Bongo	STD	41	19.848	68	55
34-GOM-3	GOM	34	CTD/Bongo	STD	42	24.822	68	30
35-GOM-1	GOM	35	CTD/Bongo	STD	41	49.836	70	20
36-GOM-1	GOM	36	CTD/Bongo	STD	42	24.822	70	15
36-GOM-2	GOM	36	CTD/Bongo	STD	42	59.808	70	5.
37-GOM-1	GOM	37	CTD/Bongo	STD	42	14.826	69	40
37-GOM-2	GOM	37	CTD/Bongo	STD	42	19.824	69	55
38-GOM-1	GOM	38	CTD/Bongo	STD	42	29.82	66	50
38-GOM-2	GOM	38	CTD/Bongo	STD	42	24.822	66	10
38-GOM-3	GOM	38	CTD/Bongo	STD	42	39.816	67	5.
39-GOM-1	GOM	39	CTD/Bongo	STD	42	19.824	67	20
40-GOM-1	GOM	40	CTD/Bongo	STD	43	49.788	69	20
41-GOM-1	GOM	41	CTD/Bongo	STD	43	44.79	69	10
41-GOM-2	GOM	41	CTD/Bongo	STD	43	49.788	68	25
41-GOM-3	GOM	41	CTD/Bongo	STD	42	54.81	68	55

41-GOM-4	GOM	41	CTD/Bongo	STD	43	24.798	69	35
42-GOM-1	GOM	42	CTD/Bongo	STD	42	54.81	67	4
42-GOM-2	GOM	42	CTD/Bongo	STD	43	29.796	67	10
42-GOM-3	GOM	42	CTD/Bongo	STD	43	59.784	67	35
42-GOM-4	GOM	42	CTD/Bongo	STD	43	14.802	67	50
43-GOM-1	GOM	43	CTD/Bongo	STD	43	4.806	67	0
43-GOM-2	GOM	43	CTD/Bongo	STD	43	54.786	67	20
44-GOM-3	GOM	44	CTD/Bongo	STD	43	24.798	66	30
45-GOM-1	GOM	45	CTD/Bongo	STD	43	59.784	68	30
46-GOM-1	GOM	46	CTD/Bongo	STD	44	14.778	66	50
47-GOM-1	GOM	47	CTD/Bongo	STD	42	14.826	65	25
47-GOM-2	GOM	47	CTD/Bongo	STD	42	44.814	66	30
47-GOM-3	GOM	47	CTD/Bongo	STD	43	4.806	65	35
LNG (Acid 1)	GOM	36	CTD 911+CTD/Bongo	FXD	42	25.008	70	36
NE Ch (Acid 2)	GOM	38	CTD 911+CTD/Bongo	FXD	42	13.500	65	46
Wilkinson Basin (Acid 3)	GOM	37	CTD 911+CTD/Bongo	FXD	42	30.000	69	40
Georges Basin (Acid 4)	GOM	39	CTD 911+CTD/Bongo	FXD	42	22.420	67	2
Jordan Basin (Acid 5)	GOM	42	CTD 911+CTD/Bongo	FXD	43	23.999	67	42
Acid 6 MAB	MAB	3	CTD Profile 911+	FXD	36	0.018	75	28
Acid 7 MAB	MAB	2	CTD Profile 911+	FXD	36	0.018	75	10
Acid 8 MAB	MAB	1	CTD Profile 911+	FXD	36	0.018	74	46
Acid 9 MAB	MAB	50	CTD Profile 911+	FXD	36	0.018	74	40
Acid 10 MAB	MAB	8	CTD Profile 911+	FXD	37	59.967	74	57
Acid 11 MAB	MAB	8	CTD Profile 911+	FXD	37	50.604	74	34
Acid 12 MAB	MAB	7	CTD Profile 911+	FXD	37	42.072	74	15
Acid 13 MAB	MAB	13	CTD Profile 911+	FXD	39	42.489	74	0
Acid 14 MAB	MAB	11	CTD Profile 911+	FXD	39	21.684	73	23
Acid 15 MAB	MAB	56	CTD Profile 911+	FXD	39	3.228	72	44
Acid 16 MAB	MAB	56	CTD Profile 911+	FXD	39	0.764	72	34
Acid 17 SNE	SNE	24	CTD Profile 911+	FXD	41	6.306	70	37
Acid 18 SNE	SNE	23	CTD Profile 911+	FXD	40	40.200	70	37
Acid 19 SNE	SNE	18	CTD Profile 911+	FXD	40	2.226	70	36
Acid 20 SNE	SNE	60	CTD Profile 911+	FXD	39	49.950	70	37
Acid 21 GB	GB	32	CTD Profile 911+	FXD	42	0.404	67	41
Acid 22 GB	GB	30	CTD Profile 911+	FXD	41	28.196	67	41
Acid 23 GB	GB	27	CTD Profile 911+	FXD	40	55.718	67	42
Acid 24 GB	GB	26	CTD Profile 911+	FXD	40	22.970	67	41
Acid 25 GB	GB	62	CTD Profile 911+	FXD	40	14.738	67	41
Acid 26 GB	GB	68	CTD Profile 911+	FXD	41	45.144	65	26
PF01 (Acid 26)	GOM	40	CTD Profile 911+	FXD	42	59.920	70	25

Acid 27 GOM	GOM	47	CTD Profile 911+	FXD	43	01.652	66	20
Great South Ch (Acid 28)	GOM	23	CTD Profile 911+	FXD	40	54.000	69	9.
BI01 (Acid 29)	GOM	48	CTD Profile 911+	FXD	44	29.130	67	13
JT04 (Acid 30)	GOM	41	CTD Profile 911+	FXD	43	46.300	68	40
Acid 32 GOM	GOM	36	CTD Profile 911+	FXD	42	18.936	70	16
Acid 33 GOM	GOM	36	CTD Profile 911+	FXD	42	21.402	70	27
Jordan Basin N (Acid 34)	GOM	41	CTD Profile 911+	FXD	44	12.000	67	42
Jordan Basin S (Acid 35)	GOM	38	CTD Profile 911+	FXD	42	42.060	67	42
Buoy M 0124 Jordan Basin (Acid 36)	GOM	42	CTD Profile 911+	FXD	43	29.44	67	52
Buoy N 0118 NE Chan	GOM	38	CTD Profile 911+	FXD	42	19.54	65	54
Buoy I 0130 east Maine shelf	GOM		CTD Profile 911+	FXD	44	06.37	68	00
Buoy E 0133 central Maine shelf	GOM		CTD Profile 911+	FXD	43	42.94	69	23

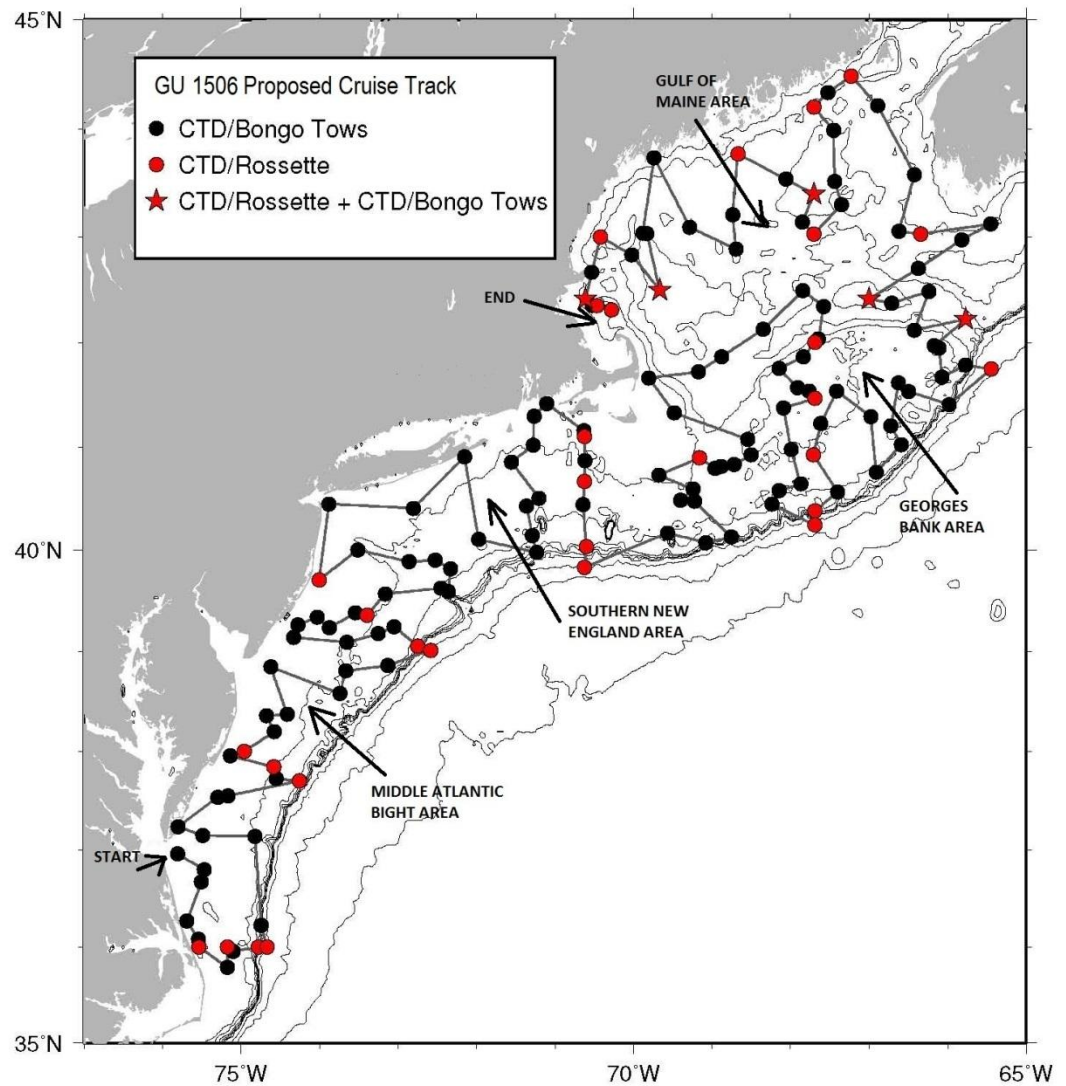


Figure 1. Proposed Cruise Track for GU 15-06 Ecosystem Monitoring Survey
8 – 25 October 2015.

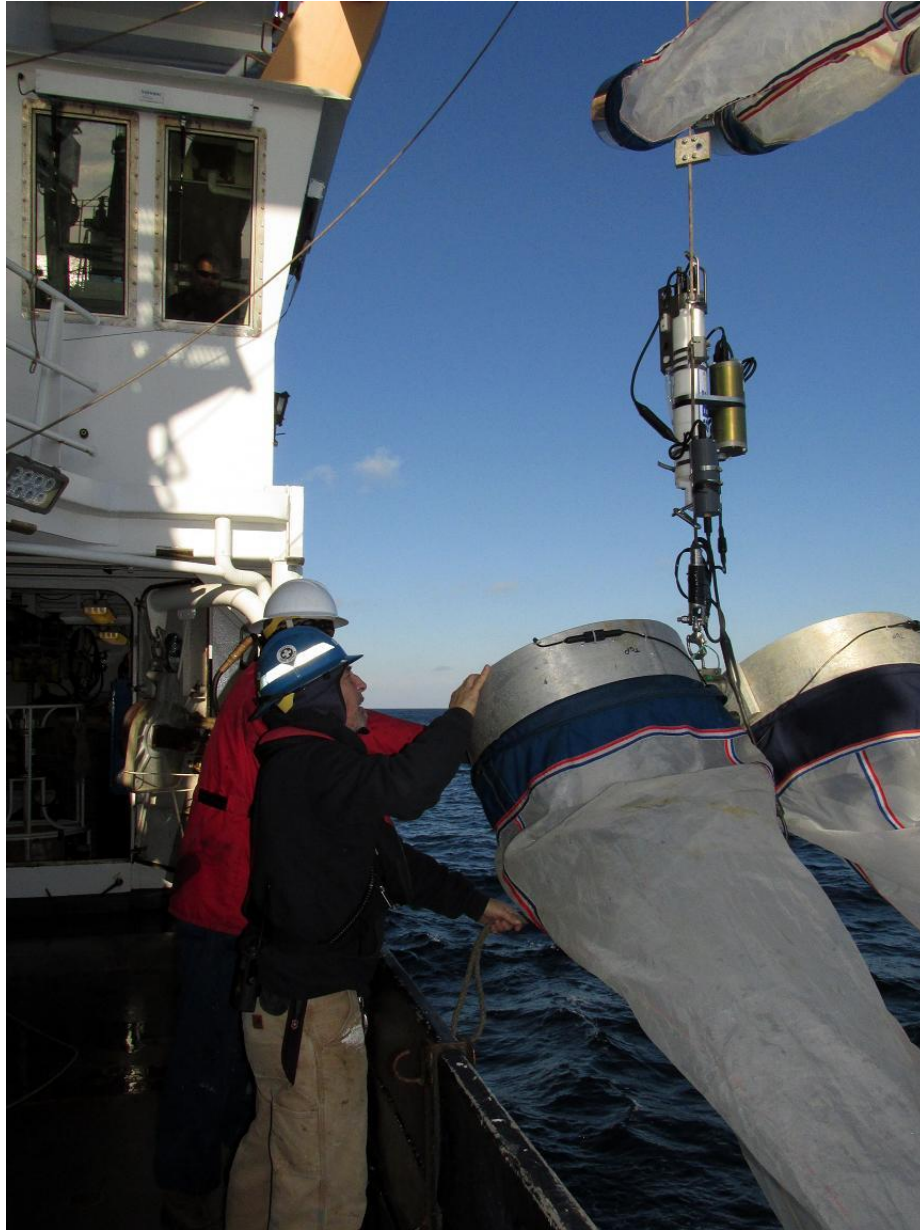
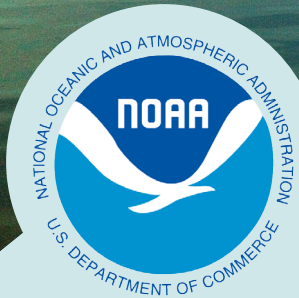


Figure 2. Plankton net sampling array, showing 61 and 20 cm bongo frames, and CTD unit.



Figure 3. A Niskin bottle rosette sampler equipped with 10 liter Niskin bottles.



NOAA FISHERIES

Pre-cruise Actions

1. Whether onboard a NOAA, chartered, or partner vessel, prior to the cruise, communicate, and coordinate with vessel crew about established protected species incidental take reporting and handling procedures.
2. Ensure regional pertinent protected resources staff are in the PSIT email alert notification list.
3. The NMFS cruise Chief Scientist or Designee shall contact the appropriate Regional Stranding Network and query about additional numbers or specific contacts to reach in case of an incidental take of a marine mammal.

Contact

For any PSIT* or NMFS protected species incidental research take protocol queries, contact:

Dr. Mridula Srinivasan, NMFS
Office of Science and Technology
301.427.8179
mridula.srinivasan@noaa.gov

Procedures & Actions for Incidental Takes of Marine Mammals in Research & Monitoring Activities

(applies to surveys on NOAA and charter vessels and partner surveys)

Context

While research conducted by NOAA or through NOAA sponsorship is undertaken to support NOAA's various missions, these activities must still comply with applicable statutes and regulations, including those relating to takes of marine mammals under the Marine Mammal Protection Act. When NOAA activities cause a take of a marine mammal, the cruise senior scientist or designee, should take the following actions.

Key Actions

1. Notify the geographically appropriate Regional Stranding Network Coordinator (contact information in this document) immediately following the incidental take of a marine mammal.
2. Regional Stranding Network Coordinator will immediately contact the Office of Law Enforcement (OLE).
3. For live injured/uninjured marine mammals, priority should be to release the animal before notifying Regional Stranding Networks.
4. For dead animals, maximum efforts should be made to retain carcass and coordinate transfer to the Regional Stranding Network.
5. If Coordinators are unreachable, collect pertinent Protected Species Incidental Take (PSIT) information and release animal or retain carcass if logistically feasible.
6. In all cases, within 48 hours of any take, designated NMFS staff shall submit take-related information to the **PSIT Main – NOAA** (website: www.st.nmfs.noaa.gov/finss/psit/psitMain.jsp). Attach narrative, photos, and completed data forms.

***PSIT** – Protected Species Incidental Take Database

What to Do with a **Live, Injured or Uninjured** Marine Mammal?

If a live, injured or uninjured marine mammal is incidentally captured, the animal should be released immediately. In the event of a large entangled whale, immediately call your regional entanglement response network.

1. Considering human safety, work from the vessel as quickly and carefully as possible to free the animal from the gear. Ensure the animal can continue to breathe while freeing from the gear.
2. If it can be done immediately without further harming the animal, photograph the animal (dorsal and ventral sides including dorsal fin, flanks, head/jaw) prior to and after removal of gear and collect required PSIT information. Research/biological sampling of marine mammals is not permitted without an appropriate Take Authorization.
3. If animal is NOT brought aboard the vessel and taking photos is not an option, provide a comprehensive summary of the incident following requirements described under 'PSIT narrative' in this document.
4. Notify Regional Stranding Network Coordinator immediately after the incident.
5. **Submit take information to PSIT within 48 hours and attach any forms, photos, and narrative to the take record within a week of the event.**

What to Do with a **Dead** Marine Mammal?

1. Notify Regional Stranding Network Coordinator about the take of a dead marine mammal.
2. Based on any prior discussions with the Regional Stranding Network and importantly, after considering logistics and human safety, make all efforts to haul animal aboard the vessel and retained for pickup by the local Regional Stranding Network. Develop a plan with Regional Stranding Network Coordinator for carcass pickup and subsequent necropsy.

If the animal cannot be hauled aboard or picked up by the Regional Stranding Network Coordinator, as a last resort, release animal after necessary information is collected as described below.

3. Photos of the carcass should be taken: dorsal fin, ventral side, and flank for marine mammals, as well as signs of entanglement, scars, and injuries. This also includes collecting required PSIT data and morphometric measurements.
4. Submit take information to PSIT within 48 hours and attach any forms, photos, and narrative to the take record within one week of the event.
5. Research/biological sampling of marine mammals is not permitted without an appropriate Take Authorization.

What to Do with **All** Marine Mammals?

In addition to the required PSIT information (date, gear, location, etc.) please complete a narrative which includes the following information. A completed narrative is essential for serious injury determinations.

1. Animal Condition (include photos)

Code 1 Live Animal	Code 2 Fresh Dead	Code 3 Moderate Decomposition	Code 4 Advanced Decomposition
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2. Mention if animal escaped or was released.
3. Indicate if the animal or other marine mammals were seen in the vicinity of the vessel during fisheries operations.
4. Animal condition post-release: Describe any observed injuries, the condition and behavioral state of released or injured animal (e.g., no obvious injuries and animal swam away vigorously, did not swim away vigorously, animal surfaced to breathe, animal sank to bottom, or blood in water observed).
5. If gear was still attached to animal after release, describe how the gear was cut and approximately how much gear is left and where it is still entangled/injured.
6. Provide comprehensive photographic evidence (if possible) and written description of live/dead or injured animal. Provide pictures of how the animal was entangled in the gear, and any gear-related interactions such as wounds or constrictions.
7. Decision-making: Include rationale for any discretionary decisions taken by Chief Scientist/crew.
8. Describe possible causes for incidental capture of the animal and any additional mitigation measures that were taken, or might be taken to prevent similar captures in the future.

Regional Stranding Response Coordinator 24/7 Hotline Numbers

(for marine mammals) are provided below. The relevant number should be included in your cruise plan and posted on the ship for easy access.

For all non-marine mammal takes, designated personnel shall report takes to PSIT within 48 hours of take.

Northeast Region	1.866.755.6622
Southeast Region	1.877.433.8299
Western Region	1.866.767.6114
Pacific Islands Region	1.888.256.9840
Alaska Region	1.877.925.7773 NMFS Stranding Coordinators Aleria Jensen 907.586.7248 and Barbara Mahoney 907.271.3448 (cell – after hours 907.360.3481) General NMFS Protected Resources Office Line 907.586.7235 Kate Wynne (NMFS Kodiak) 907.486.1517

Entanglement Response Network Numbers

Southeast Region	1.877.433.8299 or 1.877.942.5343
Northeast Region	1.866.755.6622 For large whale entanglements can also contact USCG via Channel 16.
Western Region	1.877.767.9425 (877-SOS-WHALE)
Pacific Islands Region	1.888.256.9840
Alaska Region	1.877.925.7773