



**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: Commander Nathan Hancock, NOAA  
Commanding Officer, NOAA Ship *Gordon Gunter*

FROM: Captain Anne K. Lynch, NOAA *Nancy Hancock, CDR MOAA*  
Commanding Officer, NOAA Marine Operations Center-Atlantic

SUBJECT: Project Instruction for GU-14-01  
Winter Ecosystem Monitoring Survey

Attached is the final Project Instruction for GU-14-01, Winter Ecosystem Monitoring Survey, which is scheduled aboard NOAA Ship *Gordon Gunter* during the period of 14 February – 4 March, 2014. Of the 18 DAS scheduled for this project, 18 DAS are funded in support of NMFS. This project is estimated to exhibit a Medium Operational Tempo. Acknowledge receipt of these instructions via e-mail to [OpsMgr.MOA@noaa.gov](mailto:OpsMgr.MOA@noaa.gov) at Marine Operations Center-Atlantic.

Attachment

cc:  
MOA1





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 Instruction

**Date Submitted:** 3 February, 2014

**Platform:** NOAA Ship *Gordon Gunter*

**Project Number:** GU 14-01

**Project Title:** Winter Ecosystem Monitoring Survey

**Project Dates:** 14 February – 4 March 2014

Approved by: Russell W. Beaman Date: 02-04-2014  
William A. Karp, Ph.D.  
Science and Research Director  
Northeast Fisheries Science Center

Approved by: Nancy Agee, COCOMA Date: 13 Feb 2014  
Captain Anne K. Lynch, NOAA  
Commanding Officer  
Marine Operations Center – Atlantic

**I. Overview**

- A. GU 14-01 Winter Ecosystem Monitoring Survey, 14 February – 4 March 2014
- B. Days at Sea (DAS)

Of the 18 DAS scheduled for this project, 0 DAS are funded by an OMAO allocation, 18 DAS are funded by a Line Office Allocation, 0 DAS are Program Funded, and 0 DAS are Other Agency funded. This project is estimated to exhibit a Medium Operational Tempo.

C. Area of Operation: Continental shelf waters of 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. Objectives: The cruise has several objectives to address research goals of different programs within the Ecosystem Process Division of the NEFSC and outside collaborators including: Nutrients Assessment Program at the University of Maine, Ocean Acidification Program at AOML, Ecosystem science in support of stock assessments program, Science in support of ecosystem assessments program, development of new technologies to support ecosystem studies, and NEFSC outreach and education objectives. The specific objectives include: 1) Assess changing biological and physical conditions which influence the sustainable productivity of the living marine resources of the northeast continental shelf ecosystem using CTD's and bongo nets at stations located at predetermined randomly stratified locations. CTD will collect electronic data on temperature, salinity, density, and oxygen. 2) Trends in ocean acidification and nutrient levels will be determined by collecting water samples using a rosette sampler at predetermined fixed locations. 3) Detail incursion of Labrador Current water into the Gulf of Maine by conducting CTD casts in deep basin areas. 4) Collect samples for the Census of Marine Zooplankton Project by the use of 20-cm bongos piggybacked above the 61-cm bongos. 5) Assess the effectiveness of the Dave Richardson-modified Karatsuri Rake for the collection of adult sand lance. 6) Determine the abundance and distribution of larval and juvenile sand lance (*Ammodytes sp*) and cod (*Gadus morhua*) in the areas surveyed. 6) Report northern right whale and other marine mammal, bird and turtle sightings. 7) Collect TSG, fluorometer, SCS, EK-60 Scientific Sounder and ADCP data from along the cruise track.

E. Participating Institutions

F. Science Party:

<u>Name</u>	<u>Title</u>	<u>Organization</u>	<u>Nationality</u>
Jerome Prezioso	Chief Scientist	NMFS, NEFSC, Narragansett, RI	
Christopher Taylor	Contractor	Consolidated Safety Services, Fairfax, VA	
Christopher Melrose	Research Oceanographer	NMFS, NEFSC, Narragansett, RI	
Cristina Bascunan	Oceanography Ops	NMFS, NEFSC, Woods Hole, MA	

Dan Vendettuoli	Contractor	Integrated Statistics
Tom Johnson	Mammal/Bird Observer	College of Staten Island CUNY
Nicholas Metheny*	Mammal/Bird Observer	College of Staten Island CUNY
Guillaume Cote'	Mammal/Bird Observer	Canadian Wildlife Service, NB Canada
Cara Simpson	Student Volunteer	University of Maryland, MD

\*Dietary Note: Nicholas Metheny is a vegan.

## G. Administrative

### 1. Points of Contact

Email Contact: The following should be included as recipients of the daily e-mail message:

<a href="mailto:Wendy.Gabriel@noaa.gov">Wendy.Gabriel@noaa.gov</a>	{ FEMAD Chief }
<a href="mailto:Fred.Serchuk@noaa.gov">Fred.Serchuk@noaa.gov</a>	{ Acting READ Chief }
<a href="mailto:Thomas.Noji@noaa.gov">Thomas.Noji@noaa.gov</a>	{ EPD Chief }
<a href="mailto:Bill.Karp@noaa.gov">Bill.Karp@noaa.gov</a>	{ Science and Research Director }
<a href="mailto:Russell.Brown@noaa.gov">Russell.Brown@noaa.gov</a>	{ Deputy Science and Research Director }
<a href="mailto:Nathan.Keith@noaa.gov">Nathan.Keith@noaa.gov</a>	{ NEFSC Vessel Coordinator }
<a href="mailto:Jon.Hare@noaa.gov">Jon.Hare@noaa.gov</a>	{ Oceanography Branch Chief }
<a href="mailto:Tamara.Holzwarth-Davis@noaa.gov">Tamara.Holzwarth-Davis@noaa.gov</a>	{ Oceanography Branch }
<a href="mailto:CO.Gordon.Gunter@noaa.gov">CO.Gordon.Gunter@noaa.gov</a>	{ Commanding Officer – <i>Gordon Gunter</i> }
<a href="mailto:Michael.S.Abbott@noaa.gov">Michael.S.Abbott@noaa.gov</a>	{ NEFSC Port Captain }
<a href="mailto:ops.Gordon.Gunter@noaa.gov">ops.Gordon.Gunter@noaa.gov</a>	{ Operations Officer – <i>Gordon Gunter</i> }

2. Diplomatic Clearances: This project involves Marine Scientific Research in waters under the jurisdiction of Canada. Consent will be received from Canada prior to sailing.

3. Licenses and Permits: Canada's Foreign Fishing Vessel License was provided with a diplomatic note.

## 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.

### Key Changes and Points of Emphasis:

1. Watches are likely to be on a 12 "on", 12 "off" basis.
2. The vessel will depart from and return to Newport, Rhode Island. No port calls are planned.

**3. Smoking will not be permitted during rosette deployments and water sample processing to minimize contamination of water samples. The presence of cigarette smoke has been shown to compromise measurements of nutrient and carbonate levels.**

A. Project Itinerary:

14-21 February: Transit to Newport, RI

21 February: Load and set up scientific equipment.

24 February: Embark scientific personnel and depart Newport Naval Station, RI to begin cruise activities. Depending upon the weather either head out to Georges Bank, or through the Cape Cod Canal to the Gulf of Maine.

5 March: Return to Newport Naval Station, RI. Disembark scientific personnel, and off-load scientific equipment and samples.

B. Staging and Destaging:

Please advise on any requirements or special requests

C. Operations to be Conducted:

The survey consists of a total of 60 random stratified stations on Georges Bank and the Gulf of Maine (Figure 1). These will be sampled with an array of bongo nets: a 61 cm bongo frame equipped with two 333 micron mesh nets, and a smaller 20 cm bongo frame equipped with two nets of that same mesh (Figure 2). A subset of 12 stations from the cruise will be sampled with a similar array except that the 20 cm bongo frames will be equipped with 165 micron mesh nets. There will be an additional five fixed position stations in the Gulf of Maine that will be sampled for plankton using a bongo net, and for water using a Niskin bottle rosette equipped with 12 10-liter bottles provided by the Northeast Fisheries Science Center (Figure 3). There will also be an additional 13 fixed position stations that will be sampled using only the Niskin bottle rosette sampler. On the shoal area of Georges Bank, tows with a Dave Richardson-modified Karatsuri Rake will be made at  $\leq 1.5$  knots to sample adult sand lance, if weather and time permit (Figure 4). A bottom grab may be made on these stations prior to the rake deployment to determine if the bottom is suitable for these tows. Several of the ship's systems will be running and continuously logging: ADCP, flow-through fluorometer and TSG, and EK60 data from the entire trackline. Finally, marine mammal and seabird observers will be on the 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 navigational computer. 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. If all sampling is completed in less than the time allotted for the cruise, then the vessel will use the remaining time for additional tows with the modified Karatsuri Rake at suitable

areas in the Southern New England region prior to returning to the Newport Naval Station in Newport, RI.

Oceanography Stations: A Seabird CTD profiler attached to a bongo net will be deployed at approximately 65 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. A 911 CTD will be deployed at a subset of stations for more detailed oceanographic data and water for numerous measurements. These deployments will use the two oceanographic winches and the CTD computer located in the dry lab.

Acoustic Survey Operations: EK60 operations will be conducted continuously throughout the cruise track at a constant ship speed of  $10 \pm 1$  knots, and during scientific gear deployments. EK60 data are logged to the EK60 data server, which is on the ships 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. 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 120 kHz on the EK60 and thus, the ADCP may need to be turned off at times during the cruise.

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 project. The SCS EventLog program will be used by the scientists to document all operational events (e.g., begin and end of transects and deployments). Date and time for data collections from computers, instrumentation, and logsheets recording will be synchronized using the vessel's GPS, Commanding Officer clock and Dimension IV software. Scientists from the NEFSC will work with the ship's crew before the cruises to ensure that SCS system is developing the output needed to log the operational events.

#### 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: (List restrictions such as poor weather conditions, equipment failure, safety concerns, unforeseen circumstances, as well as mitigation strategies that might be used).

The following operations will be conducted measuring the indicated parameters:

### III. Equipment

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

We request that the cable terminations for the conductive tow cables on the two hydrographic winches to be used be redone prior to this cruise. The slip rings should be checked several days in advance of the cruise so that issues can be dealt with without delays to the sailing schedule.

To minimize any contamination of samples collected from the flow-through seawater system it is requested that this system be flushed with fresh water prior to the cruise.

#### 1. Continuous Underway Sampling:

##### 1.1. SCS

1.1.1. Navigational, meteorological, and environmental data will be archived throughout the cruise using the *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.

##### 1.3. Flow-through system

1.3.1. TSG - salinity, temperature, density

1.3.2. pCO<sub>2</sub> system – surface water and atmospheric CO<sub>2</sub>

1.3.3. Fluorometer – chlorophyll a concentration

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

1.3.4.1. DIC – dissolved inorganic carbon

1.3.4.2. chlorophyll a – measured directly

1.3.4.3. salt – for salinity calibrations

##### 1.3.5. Ship Requirements

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

1.3.5.2. Flowthrough system running during cruise and logging data

1.3.5.3. Ability to draw water samples from system

##### 1.3.6. Ship Requirements

1.3.6.1. 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

#### 1.4. Surface observations

1.4.1. Large Pelagic, seabirds, sea turtles, and marine mammal – observations made during daylight hours by one observer on a 4 hour rotation

##### **1.4.2. Ship Requirements**

1.4.2.1. Space on flying bridge for observers to work in good weather

1.4.2.2. Space on bridge for observers to work in bad weather

#### 1.5. PAR sensor

1.5.1. PAR sensor will be mounted in location least likely to be shadowed by vessel superstructure. Cable will be run to CTD lab

##### **1.5.2. Ship Requirements**

1.5.2.1. None

##### 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.

61 cm 333 micron mesh + 20 cm 333 micron mesh – zoo- and ichthyoplankton

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

45 kg depressor weight for bongo net deployments

##### **Ship Requirements**

Terminations be redone prior to cruise

Slip rings be checked prior to cruise and redone if necessary

Deployments will be as during bottom trawl survey using same winch

SBE19 connected to conducting cable on aft winch at side sampling station

NEMA Data String for CTD Computer

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

SBE19 – Temperature, conductivity, depth

Water bottles – tripped manually with a messenger

Salt - for salinity calibrations

##### **Ship Requirements**

None

CTD Rosette – deployed at subset of stations surface to 500 m or 5 m from bottom; approximately 20-50 locations during the course of the cruise

SBE911 – salinity, temperature, density

Fluorometer – chlorophyll a concentration

PAR – light



Water bottles – tripped automatically from computer in CTD Lab  
Salt - for salinity calibrations  
Nutrients – N, P, Si, others  
Ocean Carbon – DIC, TAlk  
Phytoplankton species composition  
Microzooplankton species composition

### **Ship Requirements**

SBE911 connected to conducting cable on forward winch at side sampling station.

Terminations be redone prior to cruise

Slip rings be checked prior to cruise and redone if necessary

Disposal of waste water cannot happen before, during, or right after CTD rosette operations

Smoking is not allowed on Oceanography deck during CTD rosette operations owing to nutrient collections and carbonate chemistry collections. **The presence of cigarette smoke has been shown to compromise these measurements.**

NEMA Data String to Computer Lab

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

## **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

The following chemicals will be placed aboard *Gordon Gunter* prior to departure, and MSDS's will be provided to the ship's OPS officer at that time or sooner:

<u>ITEM</u>	<u>QUANTITY</u>	<u>FURNISHED BY</u>
37% Formaldehyde	10 gal	NMFS, NEFSC, Narragansett, RI
90% Ethyl alcohol (ethanol)	20 gal	NMFS, NEFSC, Narragansett, RI
Mercuric chloride (saturated soln.)	50 ml	NMFS, NEFSC, Narragansett, RI
Acetone	500 ml	NMFS, NEFSC

#### C. Chemical safety and spill response procedures (example)

##### A: ACID

- Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas.
- Ventilate closed spaces before entering them.
- Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
- **Large Spills:** Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
- **Small Spills:** Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

- Never return spills in original containers for re-use.
- Neutralize spill area and washings with soda ash or lime. Collect in a non-combustible container for prompt disposal.
- J. T. Baker NEUTRASORB® acid neutralizers are recommended for spills of this product.

**M: Mercury**

- Spills: Pick up and place in a suitable container for reclamation or disposal in a method that does not generate dust. Sprinkle area with sulfur or calcium polysulfide to suppress mercury. Use Mercury Spill Kit if need be.

**F: 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.

Inventory of Spill Kit supplies

Product Name	Amount	Chemicals it is useful against	Amount it can clean up
Spill-X-FP	1.68 kg	Formaldehyde	10 gallons
Mercury Tamer	250 gm	Mercuric Chloride	2 Liters

(OR See attached Appendix #)

D. Radioactive Materials

No Radioactive Isotopes are planned for this project. (Replaces all below under IV. D-E)

**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.

Program Data - At the end of the cruise the ship will provide the chief scientist with three copies of 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.

### 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 978-585-8473; right whale sightings south of that border should be reported to 904-237-4220. 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/read/protosp/mainpage/surveys/documents/Guide\\_to\\_Reporting\\_Whale\\_Sightings.pdf](http://www.nefsc.noaa.gov/read/protosp/mainpage/surveys/documents/Guide_to_Reporting_Whale_Sightings.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

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, whale, dolphin, porpoise, marine turtle, or seal (e.g., collision with a whale or bycatch of a sea turtle), the NMFS Northeast Regional Office must be notified within 24 hours of the interaction. If an interaction with any of those species occurs or if the vessel's company notices an animal that is entangled, injured, in distress, or dead, 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 bycatch: 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 animals shall, if feasible, be frozen and returned to the Woods Hole Laboratory.

Marine mammal bycatch: All marine mammals taken incidental to fishing activities must 1) be clearly photographed (multiple views if possible, including at least one photograph of the head, 2) be identified to the species level, 3) have body length (snout to tail (seals), beak to the notch in the fluke/tail (whales, dolphins and porpoises)), measured in centimeters, 4) 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). Live animals shall then be returned to the sea. Dead animals shall, if feasible, be frozen and returned to the Woods Hole Laboratory.

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 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 Ship Operation Evaluation form is to be completed by the Chief Scientist. The preferred method of transmittal of this form is via email to [omao.customer.satisfaction@noaa.gov](mailto:omao.customer.satisfaction@noaa.gov). If email is not an option, a hard copy may be forwarded to:

Director, NOAA Marine and Aviation Operations  
NOAA Office of Marine and Aviation Operations  
8403 Colesville Road, Suite 500  
Silver Spring, MD 20910

### **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, Revised: 02 JAN 2012) 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>. The completed form should be sent to the Regional Director of Health Services at Marine Operations Center. The participant can mail, fax, or scan and send via secure e-mail the form using the contact information below; participants should take precautions to protect their Personally Identifiable Information (PII) and medical information. The NHSQ should reach the Health Services Office no later than 4 weeks prior to the project to allow time for the participant to obtain and submit additional information that health services might require before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of the NHSQ. Be sure to include proof of tuberculosis (TB) testing, sign and date the 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.

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  
E-mail [MOA.Health.Services@noaa.gov](mailto:MOA.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 e-mail and the Very Small Aperture Terminal (VSAT) link. Standard VSAT bandwidth at 128kbs is shared by all vessels staff and the science team at no charge. Increased bandwidth in 30 day increments is available on the VSAT systems at increased cost to the scientific party. If increased bandwidth is being considered, program accounting is required and it must be arranged at least 30 days in advance.

#### E. IT Security

Any computer that will be hooked into the ship's network must comply with the *OMAO Fleet IT Security Policy* 1.1 (November 4, 2005) prior to establishing a direct connection to the NOAA WAN. Requirements include, but are not limited to:

- (1) Installation of the latest virus definition (.DAT) file on all systems and performance of a virus scan on each system.
- (2) Installation of the latest critical operating system security patches.
- (3) No external public Internet Service Provider (ISP) connections.

Completion of the above requirements prior to boarding the ship is required.

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

#### F. Foreign National Guests Access to OMAO Facilities and Platforms

Foreign National access to the NOAA ship or Federal Facilities is not required for this project. (Replaces all below under VIII. F)

OR

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 e-mail generated by the Servicing Security Office granting approval for the foreign national guest's visit. (For NMFS-sponsored guests, this e-mail will be transmitted by FNRS.) This e-mail 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 e-mail 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.
2. Station/Waypoint List (coordinates in Latitude, Longitude: degree-minutes)

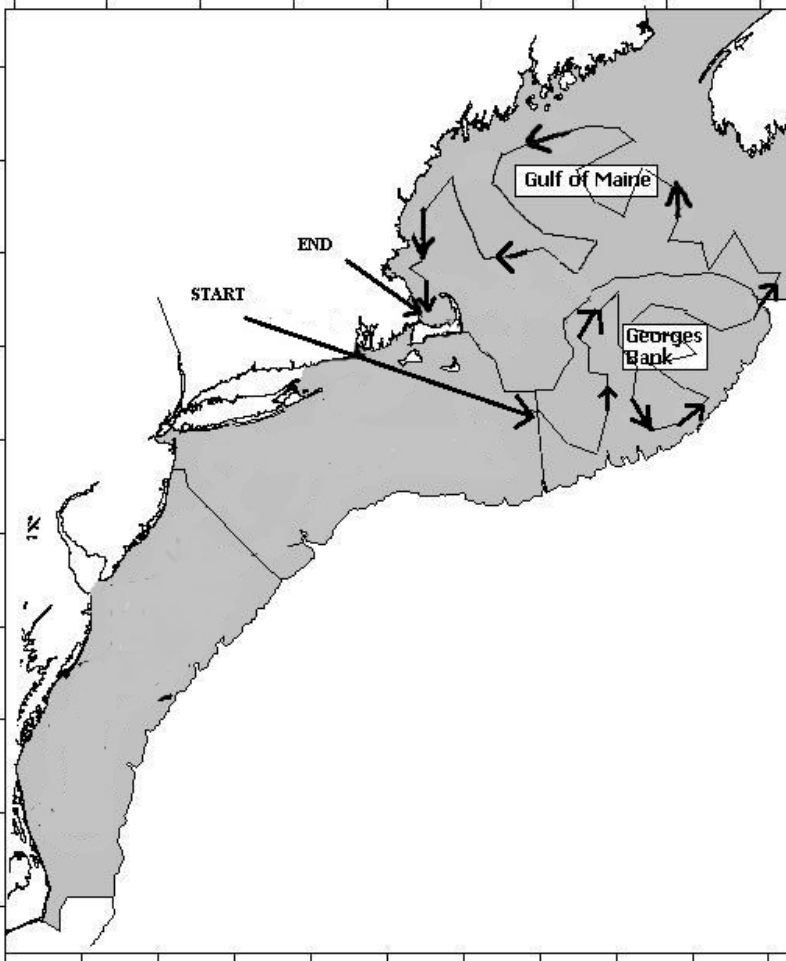


Figure 1. Two planned survey areas, Georges Bank and Gulf of Maine, (labeled) plus a proposed cruise track for operations aboard *Gordon Gunter* Winter Ecosystems Monitoring Survey, during 24 February – 5 March 2014.



Figure 2. Plankton net sampling array, showing 61 and 20 cm bongo frames, CTD unit and 45 kg depressor weight.



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



Figure 4. Dave Richardson-modified Karatsuri Sand Lance Collection Rake